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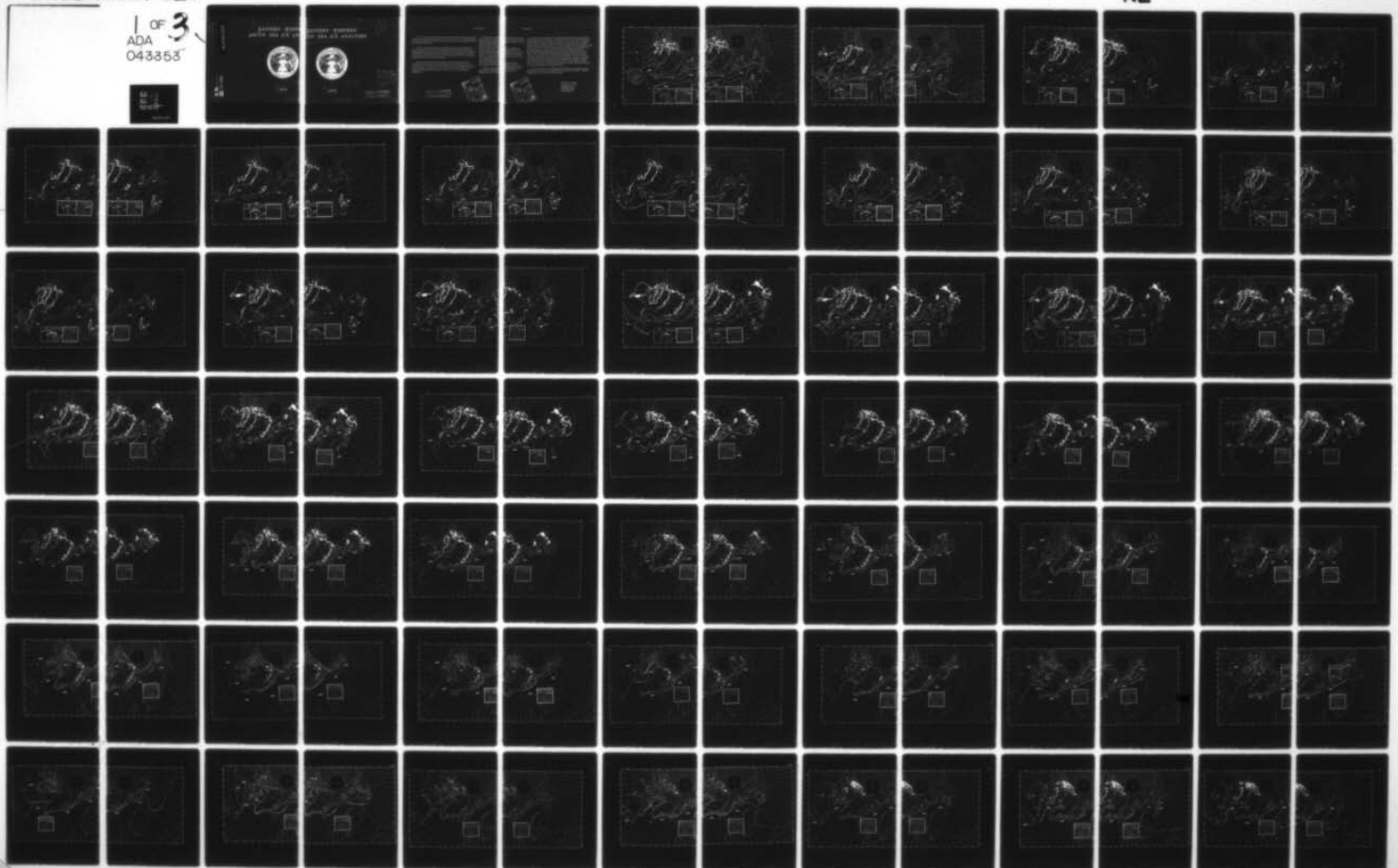
FLEET WEATHER FACILITY SUITLAND MD
EASTERN-WESTERN ARCTIC SEA ICE ANALYSES. (U)
1976

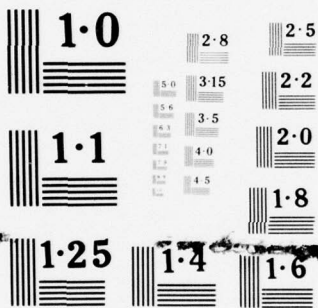
F/G 8/12

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1 OF 3
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NATIONAL BUREAU OF STANDARDS
MICROCOPY RESOLUTION TEST CHART

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FOREWARD

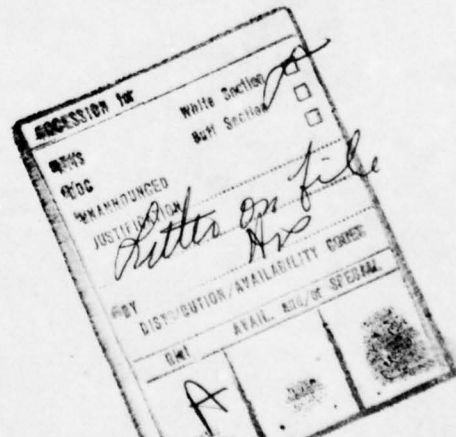
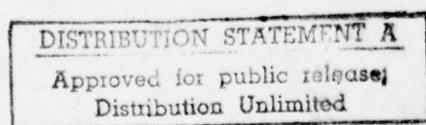
The U.S. Navy has a long and colorful history of polar exploration and currently is an active participant in the growing national activity in the Arctic and Antarctic. The strategic importance and increased demand for the natural resources of these areas has resulted in a greater requirement for environmental information.

Until a few years ago, reliable sea ice information in the polar regions was based on a relatively few shore station and ship reports augmented by limited aerial reconnaissance data. These data were further restricted to the relatively small areas observed primarily during the ship operating season. The principal aim of this publication is to provide operators and researchers with historical weekly hemispheric analyses of sea ice conditions derived principally from satellite imagery supplemented by conventional observations.

The advent of high resolution satellite imagery combined with the ground truth of conventional observations has only recently provided description of the polar ice fields on a semi-synoptic scale. Since 1970, the Fleet Weather Facility at Suitland, Maryland has prepared operational analyses and forecasts of sea ice conditions in the Arctic and Antarctic for the Department of Defense and various other users. The results of these initial efforts are contained herein.

The charts were constructed from satellite imagery and conventional data rather than the current analysis was compared with available climatic radiometer imagery, visual and infrared (NOAA) satellites and microwave radiometer data as the primary data sources. Limited data from the Meteorological Satellite Program were utilized. The 19.35 GHz microwave radiometer on NIMBUS V provided an ice edge detection source during the polar night and during seasons with adequate light, visible and infrared with 1 KM resolution and the data from NOAA 2, 3, and 4 satellites were used due to seasonally small water-ice coverage.

The user of this publication is requested to report any effort prepared for operational use or regarding any aspect of the analysis.



FOREWARD

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operators and researchers
red principally from satellite

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The charts were constructed by Navy ice analysts under operational time constraints from satellite imagery and conventional data. Reanalysis with late data was not normally attempted; rather the current analysis was prepared incorporating this to the extent possible. The analysis was compared with available climatology in an attempt to eliminate gross errors. Scanning radiometer imagery, visual and infrared, from the National Oceanic and Atmospheric Administration (NOAA) satellites and microwave radiometer data from the NIMBUS V research satellite were the primary data sources. Limited use of the Earth Resources LANDSAT and Defense Meteorological Satellite Program (DMSP) imagery as well as conventional observations were utilized. The 19.35 GHZ microwave radiometer with 25 kilometer (KM) resolution aboard NIMBUS V provided an ice edge and limited inner pack conditions. This was the basic data source during the polar night and over areas dominated by persistent cloud cover. During the seasons with adequate light, visual data from the Very High Resolution Radiometer (VHRR) with 1 KM resolution and the 4 KM resolution data from the Scanning Radiometer aboard NOAA 2, 3, and 4 satellites were utilized. Infrared radiometer data was of limited value primarily due to seasonally small water-ice temperature differences.

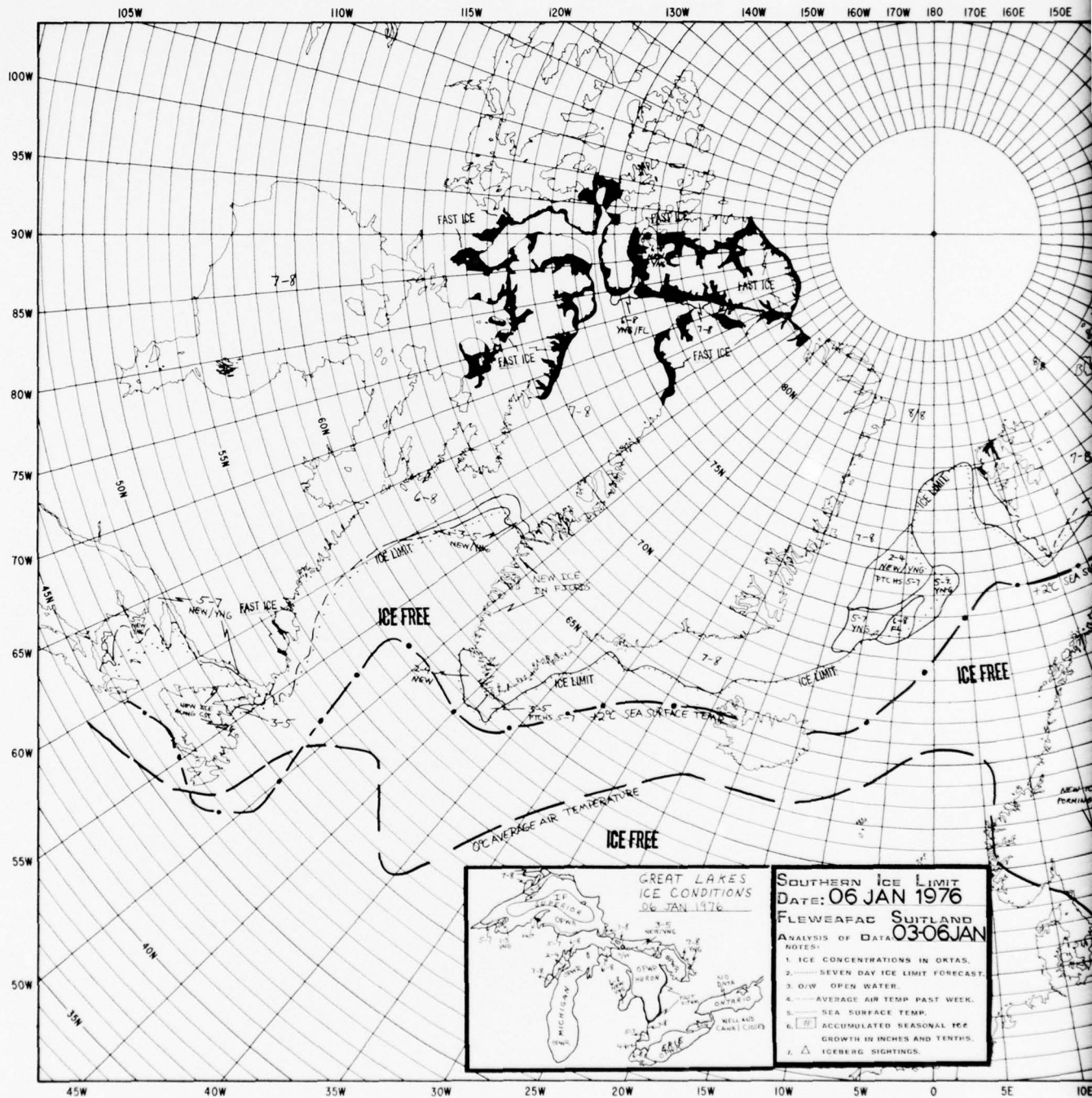
The user of this publication is reminded that the information presented reflects an initial effort prepared for operational use and should temper his application accordingly. Comments regarding any aspect of the analysis effort are welcomed.

VINCENT W. ROPER
Commander, U. S. Navy
Commanding Officer
Fleet Weather Facility
Suitland, Maryland



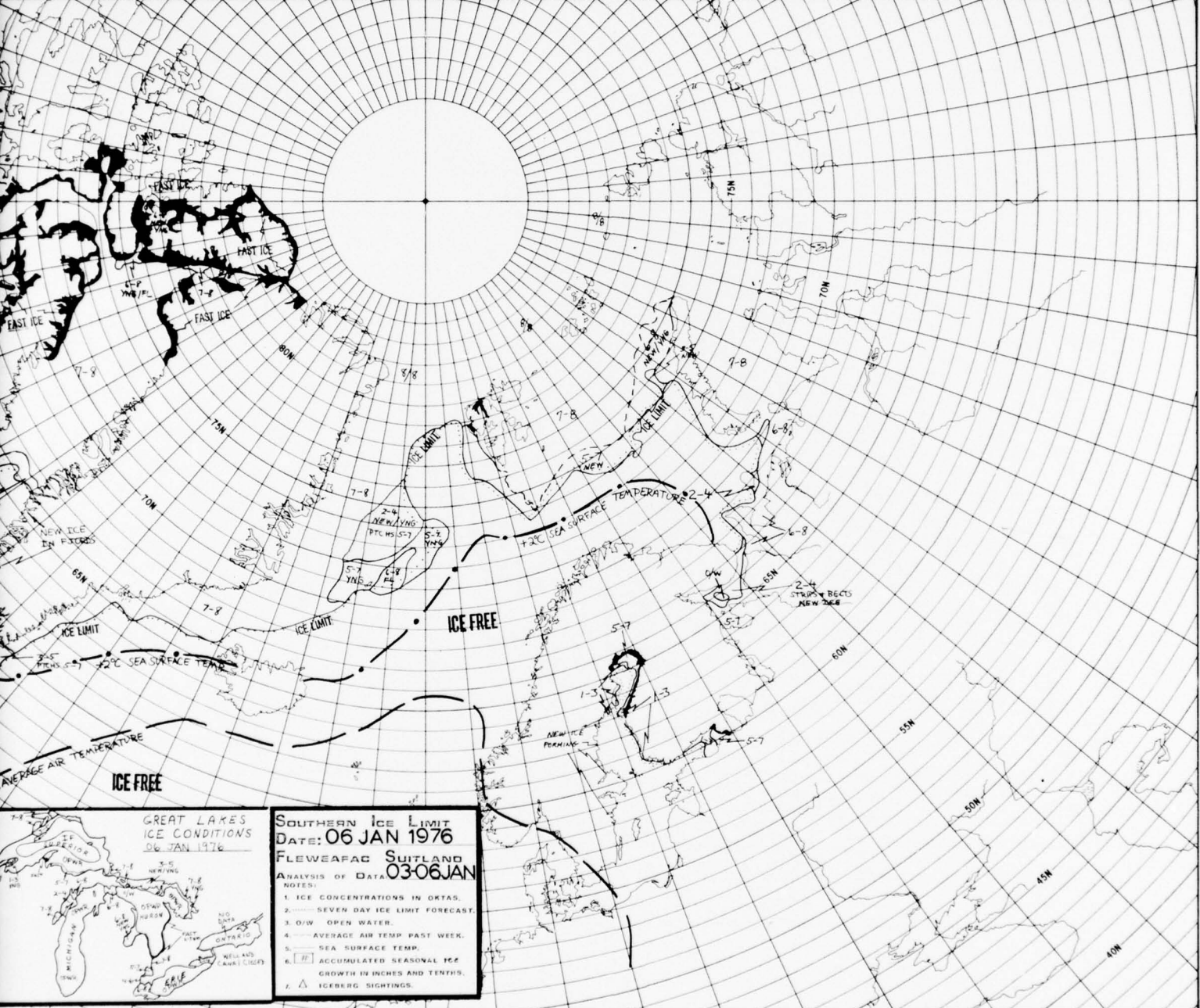
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120W 130W 140W 150W 160W 170W 180 170E 160E 150E 140E 130E 120E 115E 110E 105E

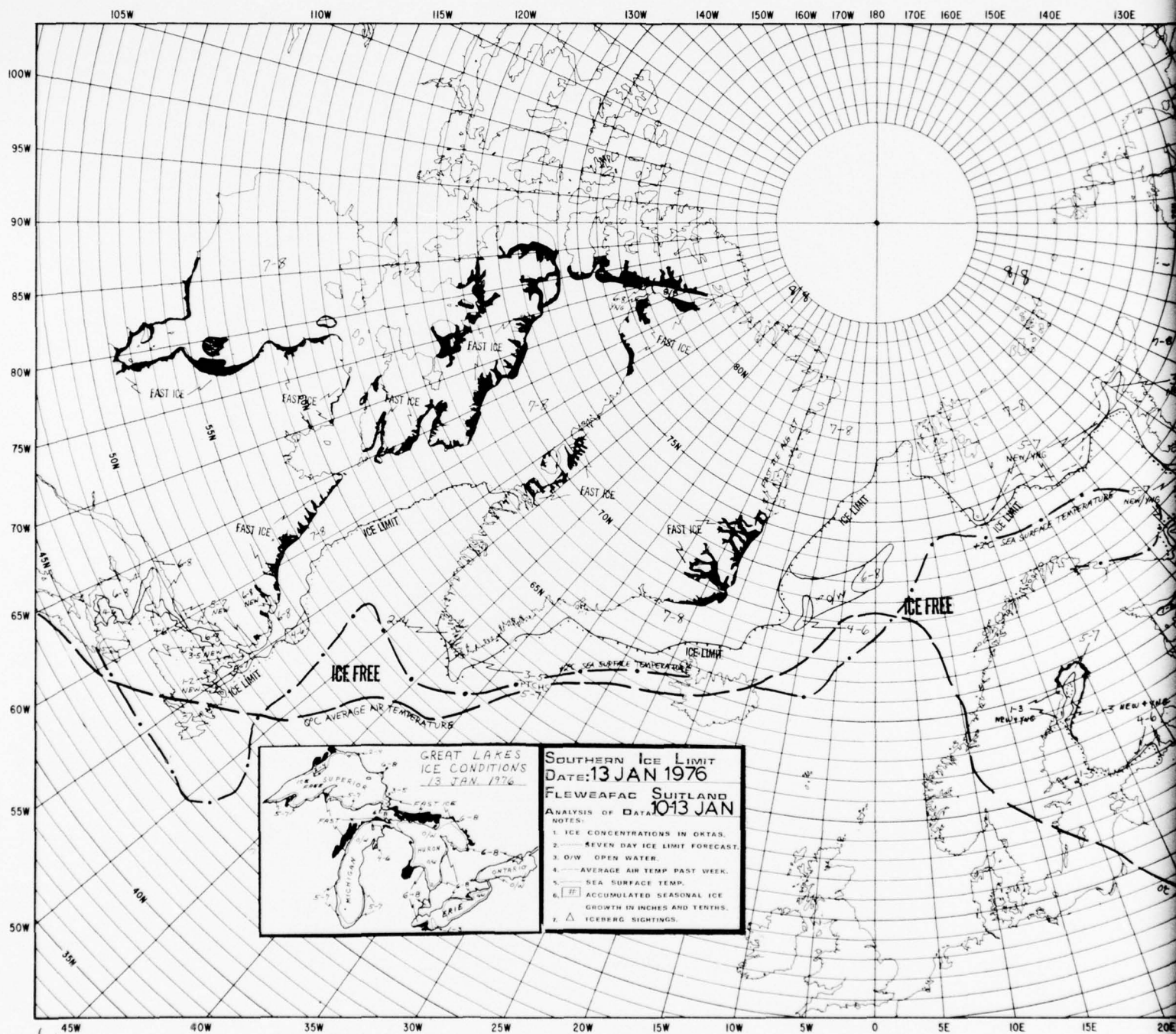
100E
95E
90E
85E
80E
75E
70E
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45E

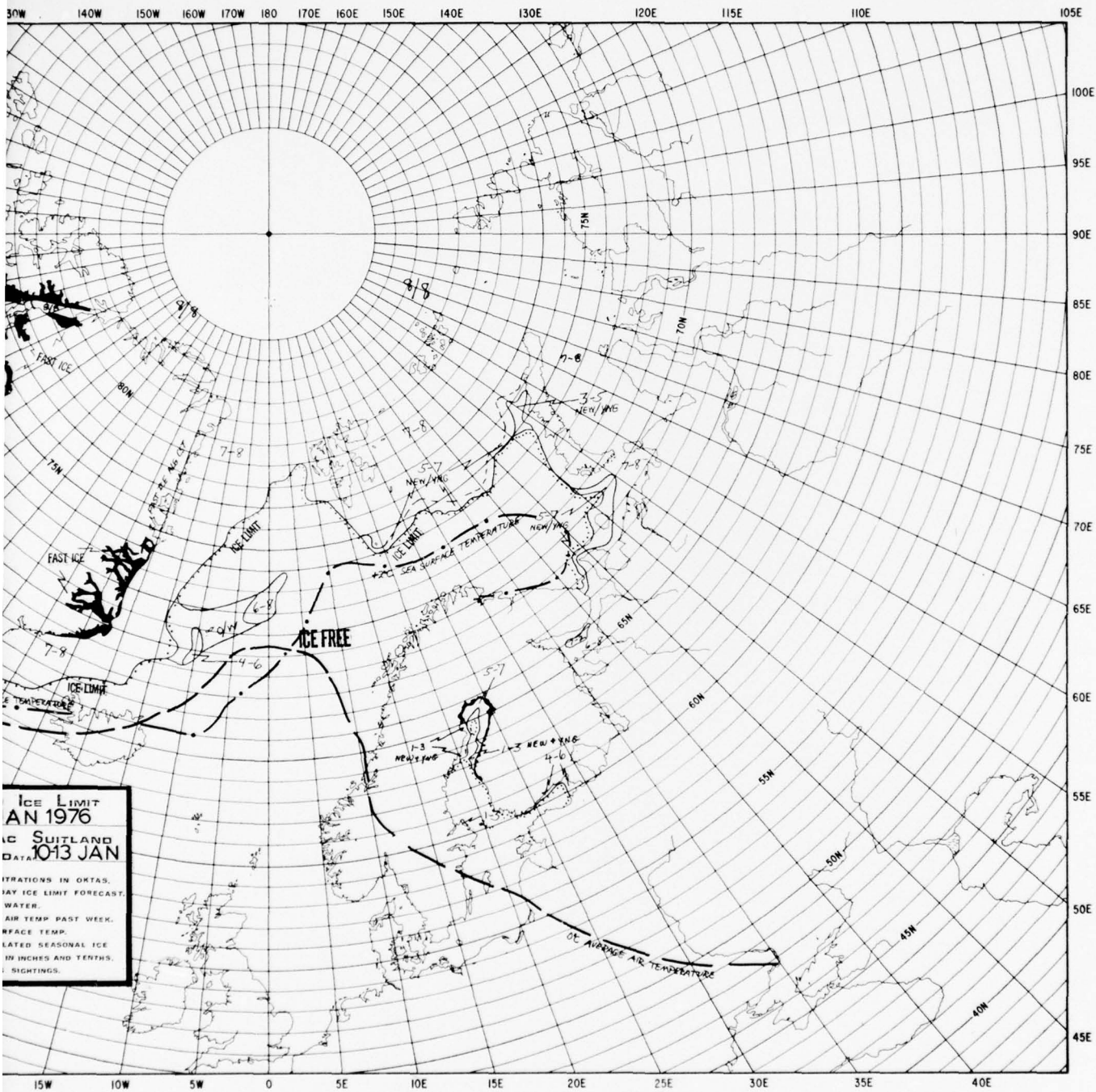


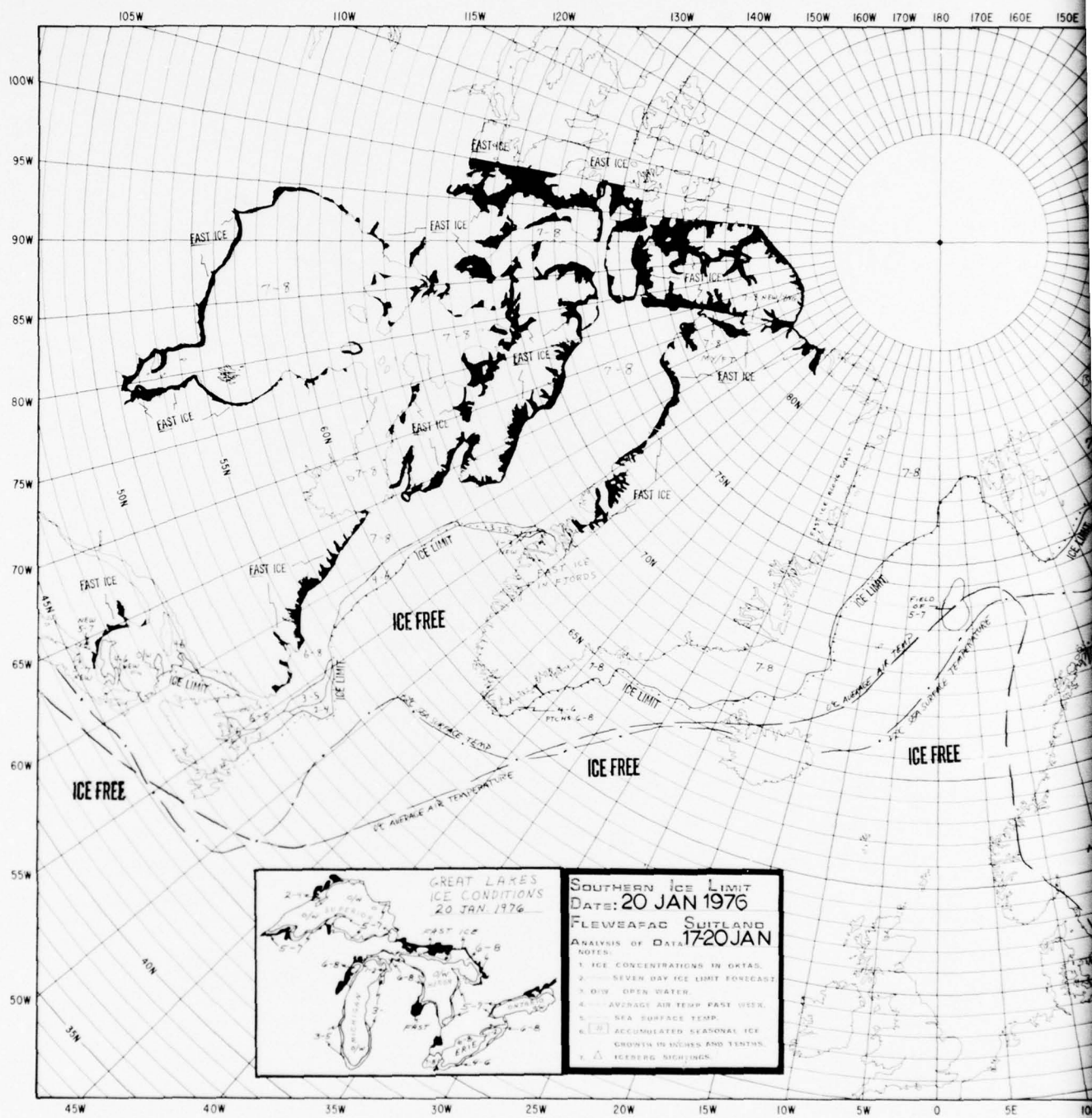
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DATE: 06 JAN 1976
FLEWEAFAC SUITLAND
03-06JAN
ANALYSIS OF DATA
NOTES:
 1. ICE CONCENTRATIONS IN ORTAS.
 2. SEVEN DAY ICE LIMIT FORECAST.
 3. O/W OPEN WATER.
 4. AVERAGE AIR TEMP PAST WEEK.
 5. SEA SURFACE TEMP.
 6. ACCUMULATED SEASONAL ICE GROWTH IN INCHES AND TENTHS.
 7. ICEBERG SIGHTINGS.

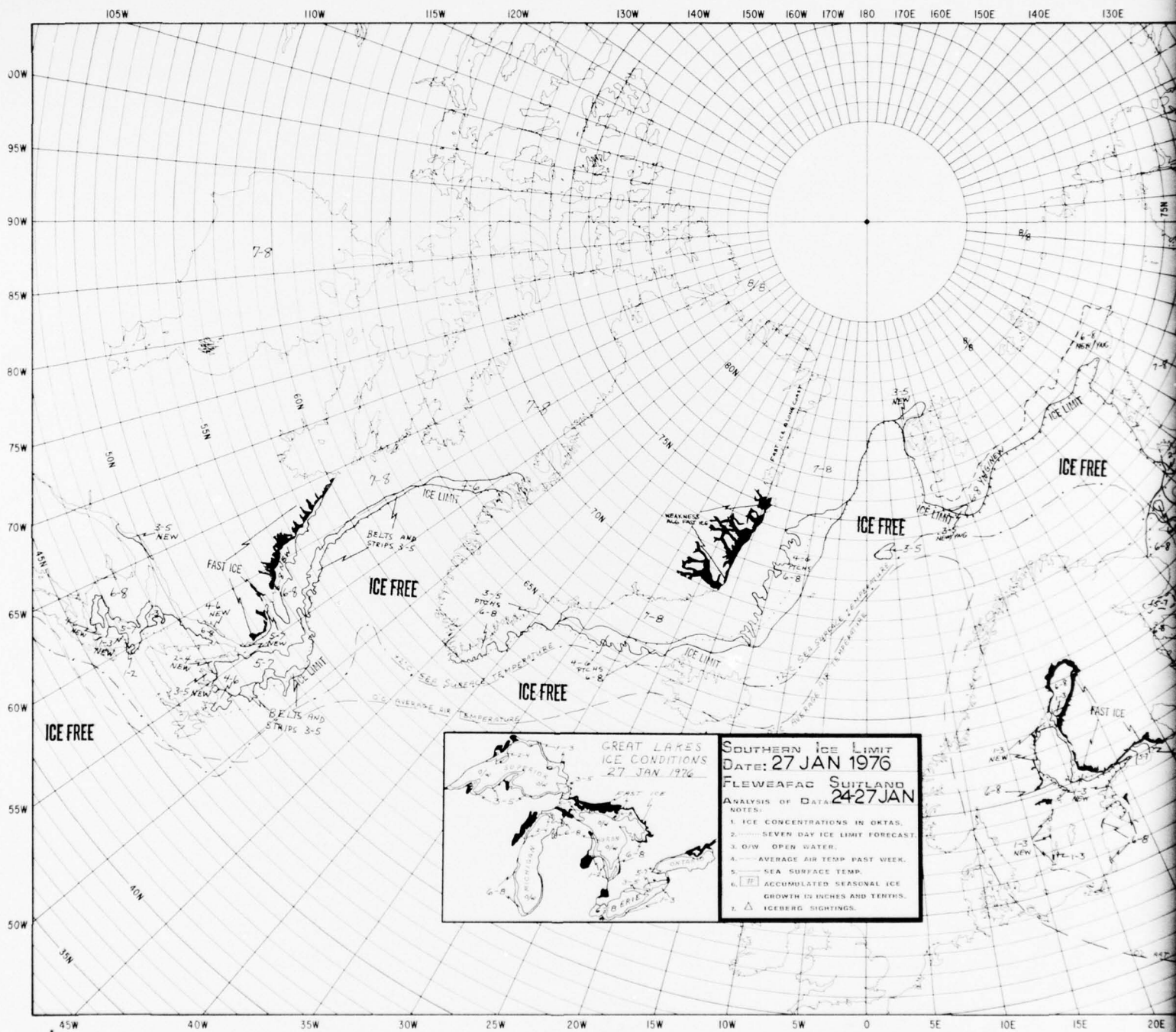
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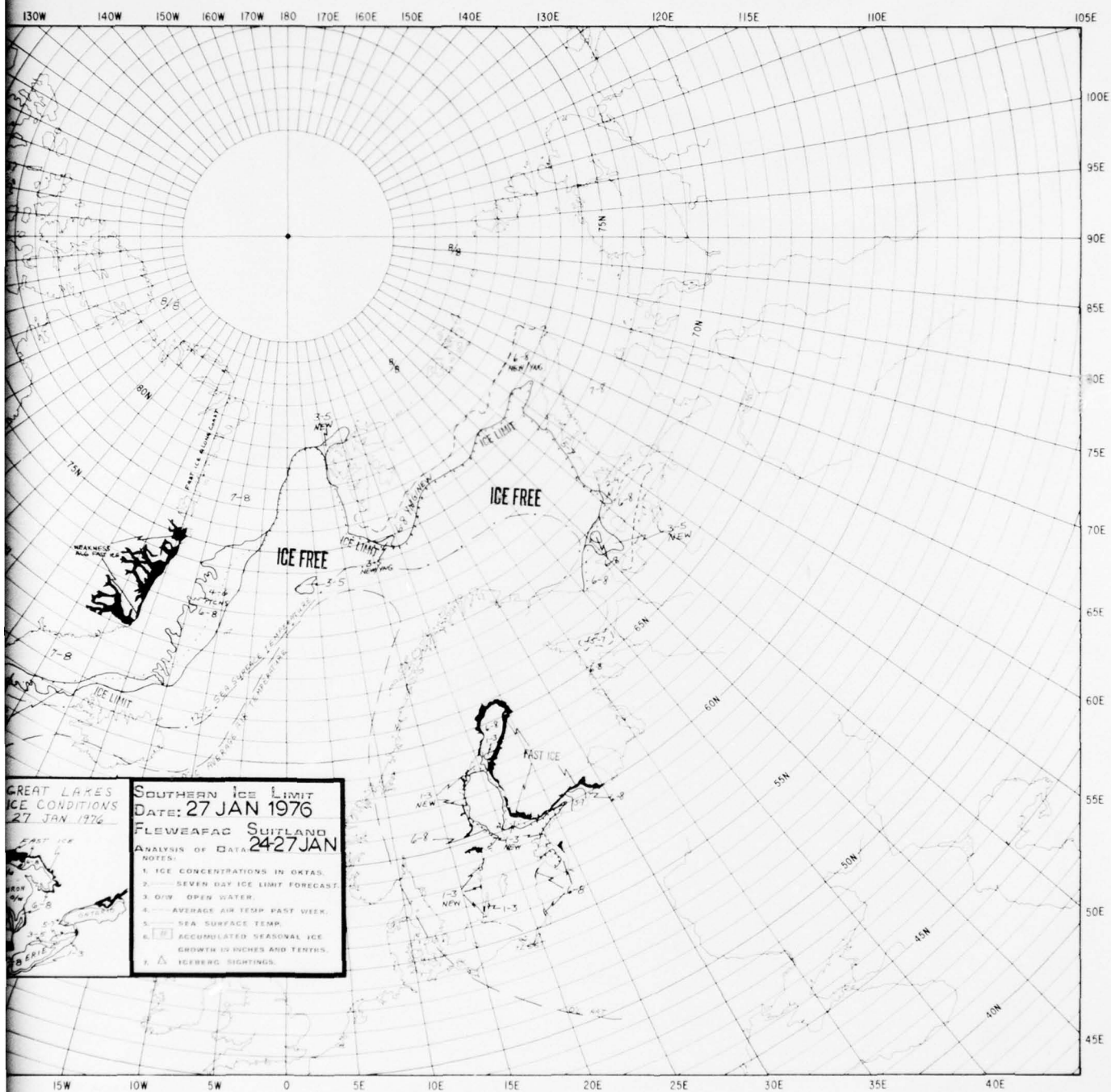
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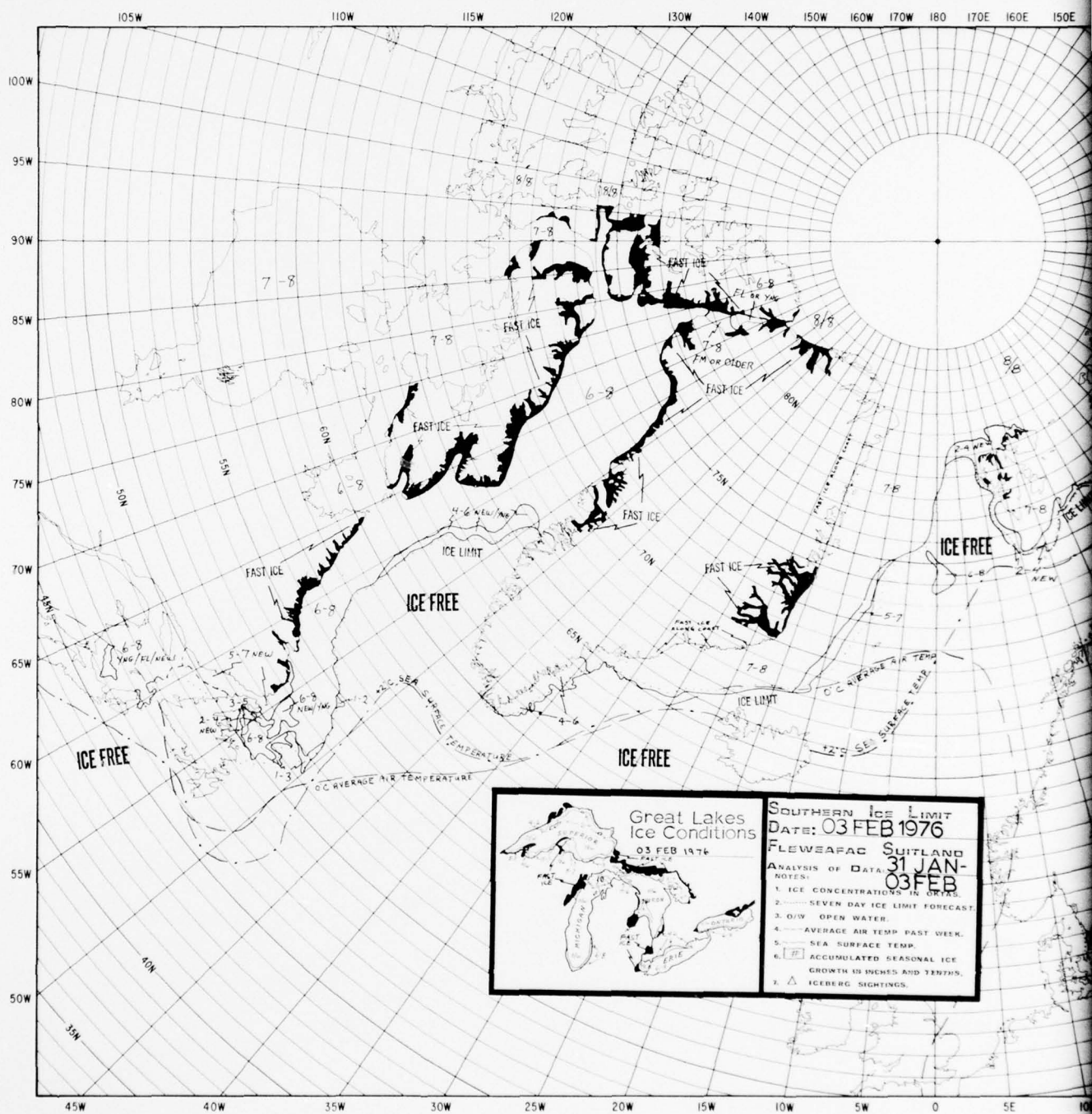


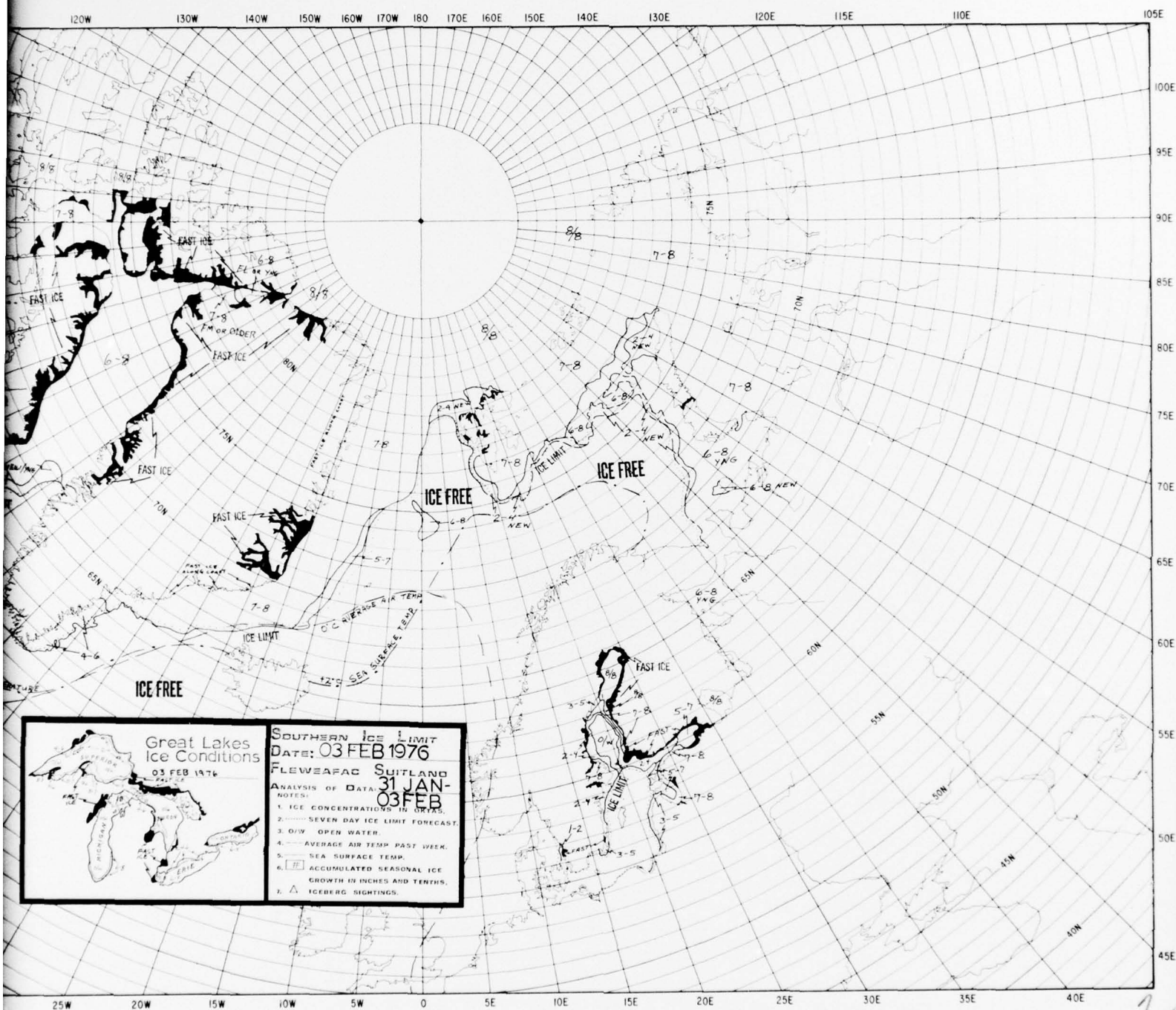




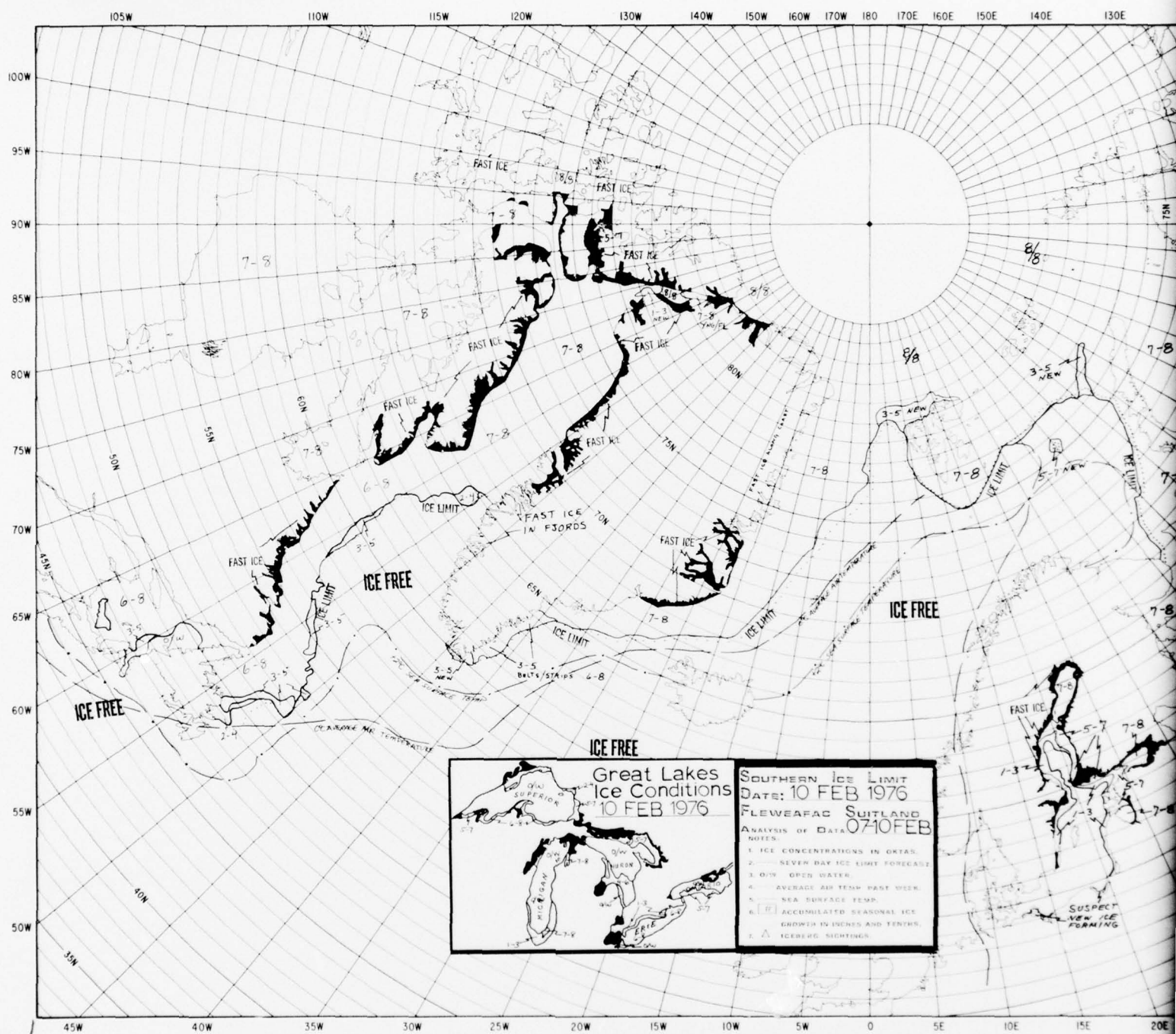


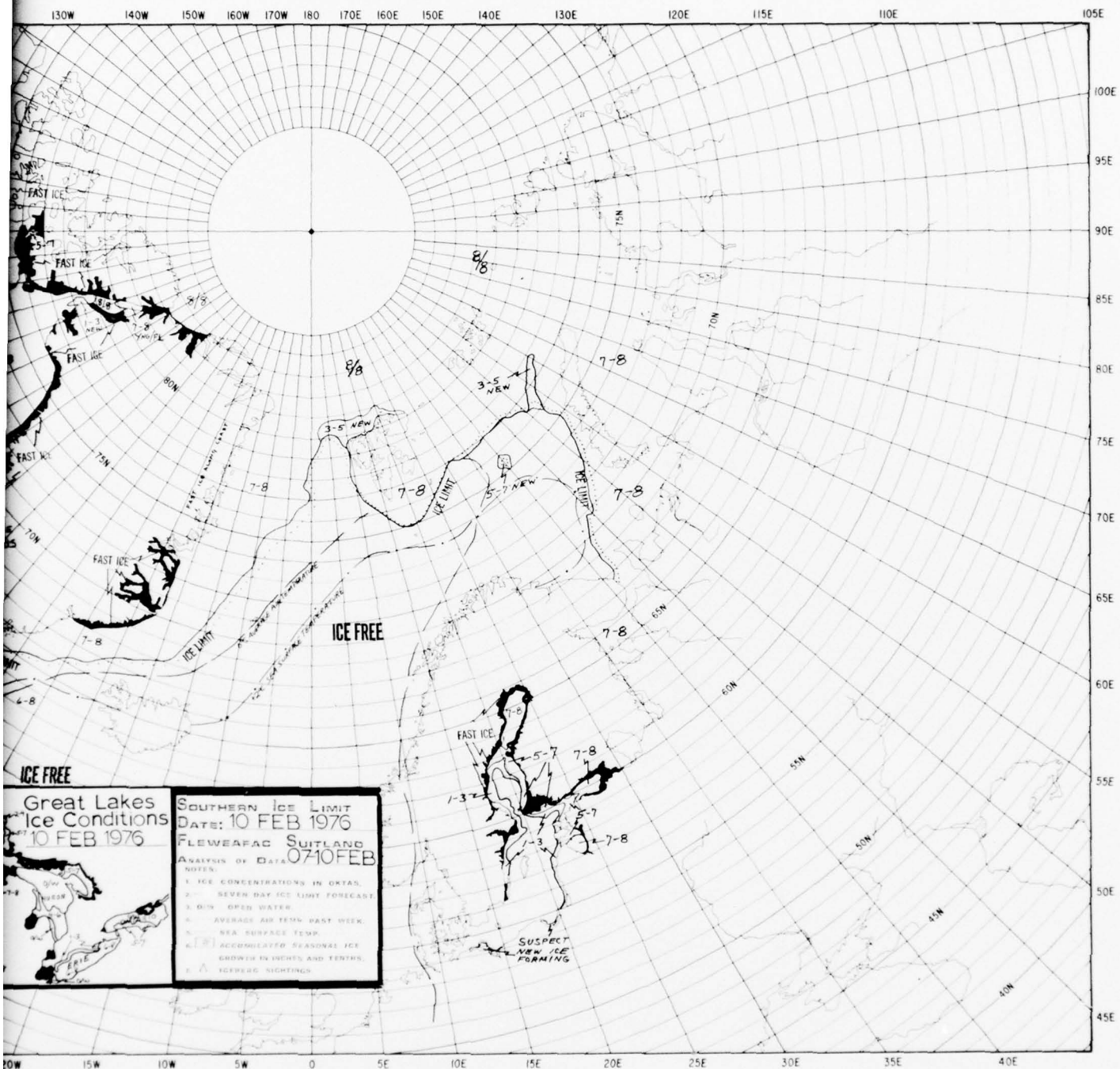


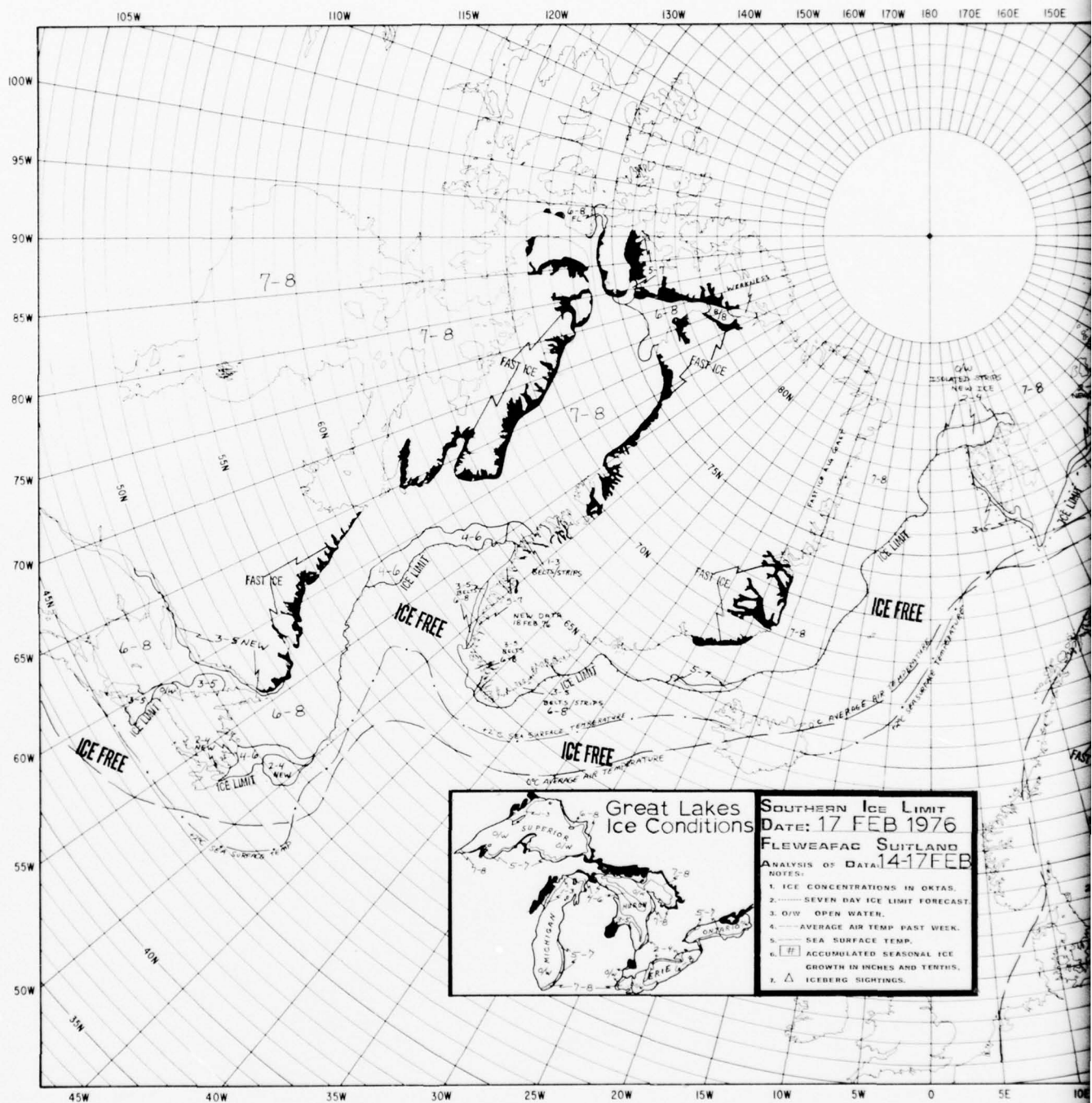




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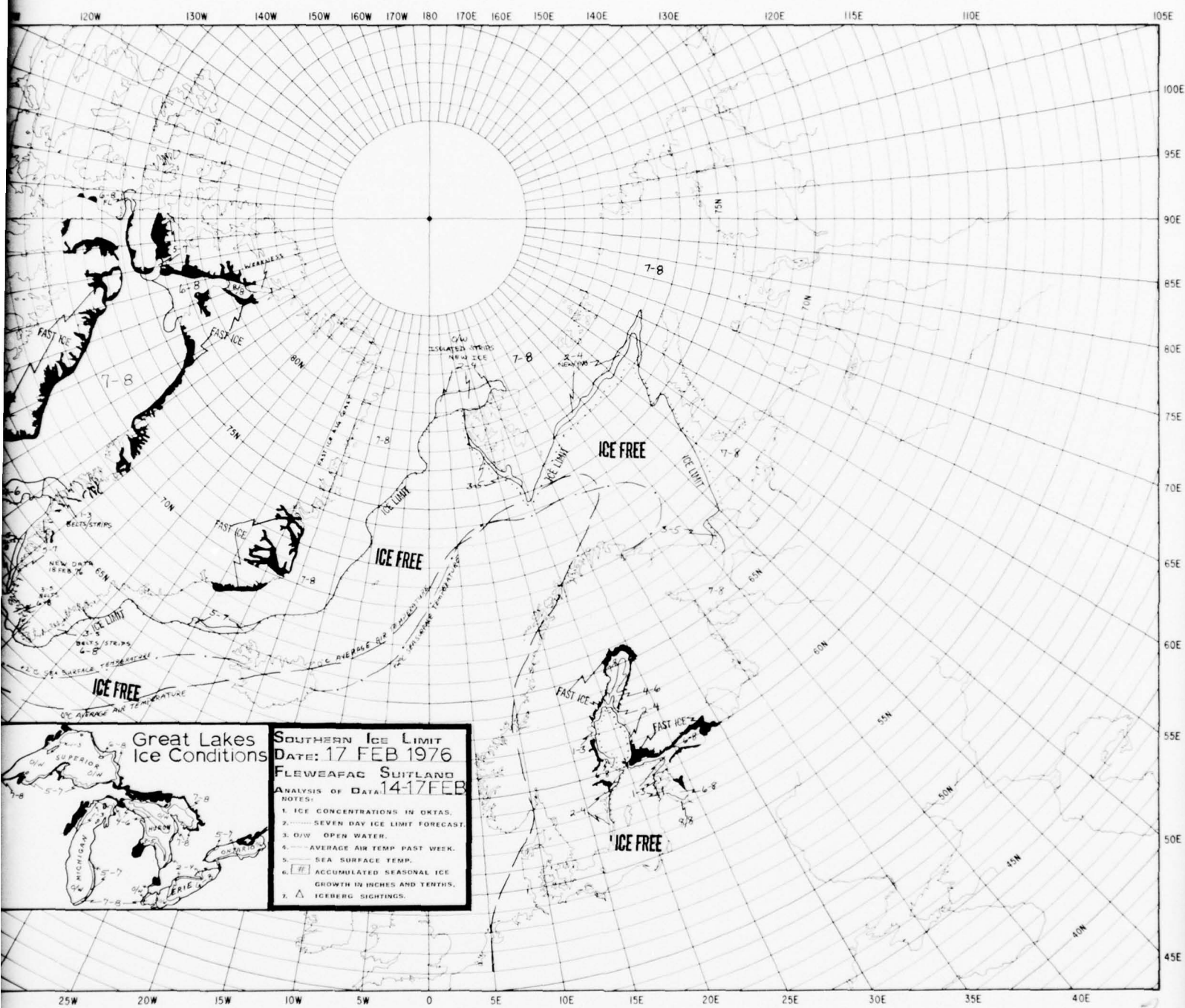


Great Lakes Ice Conditions

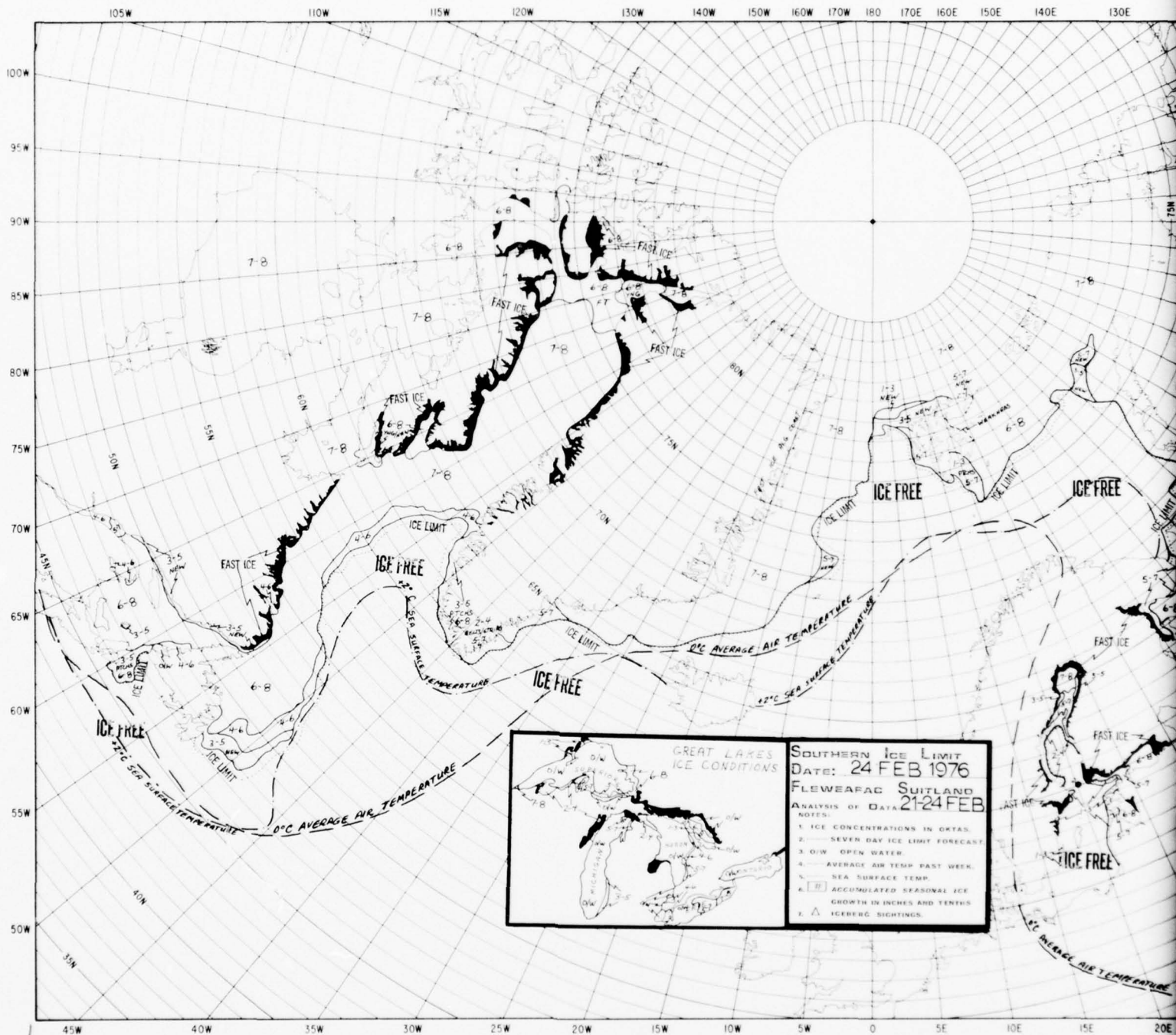
Southern Ice Limit
DATE: 17 FEB 1976
FLEWEAFAC SUITLAND
ANALYSIS OF DATA: 14-17 FEB

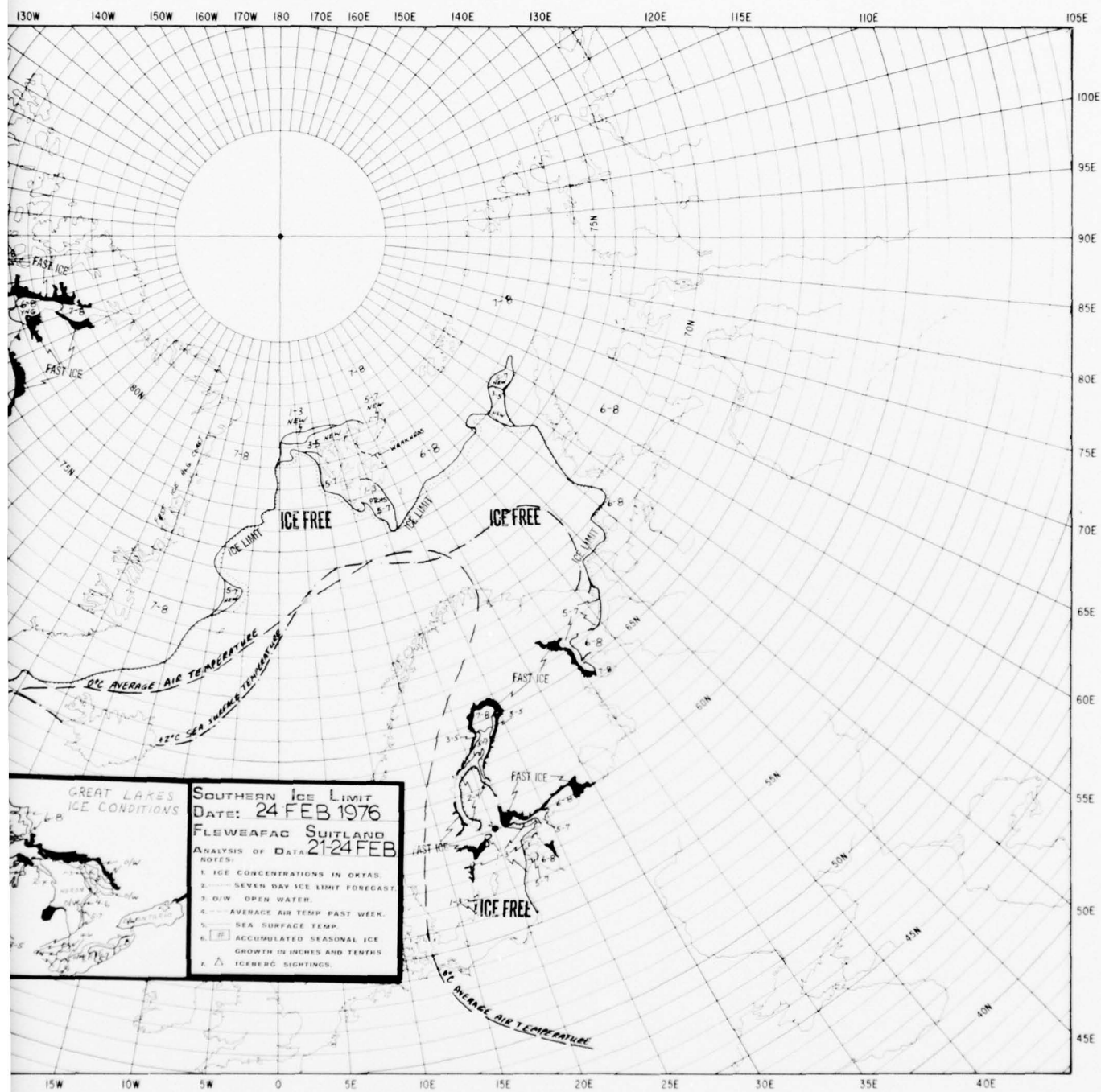
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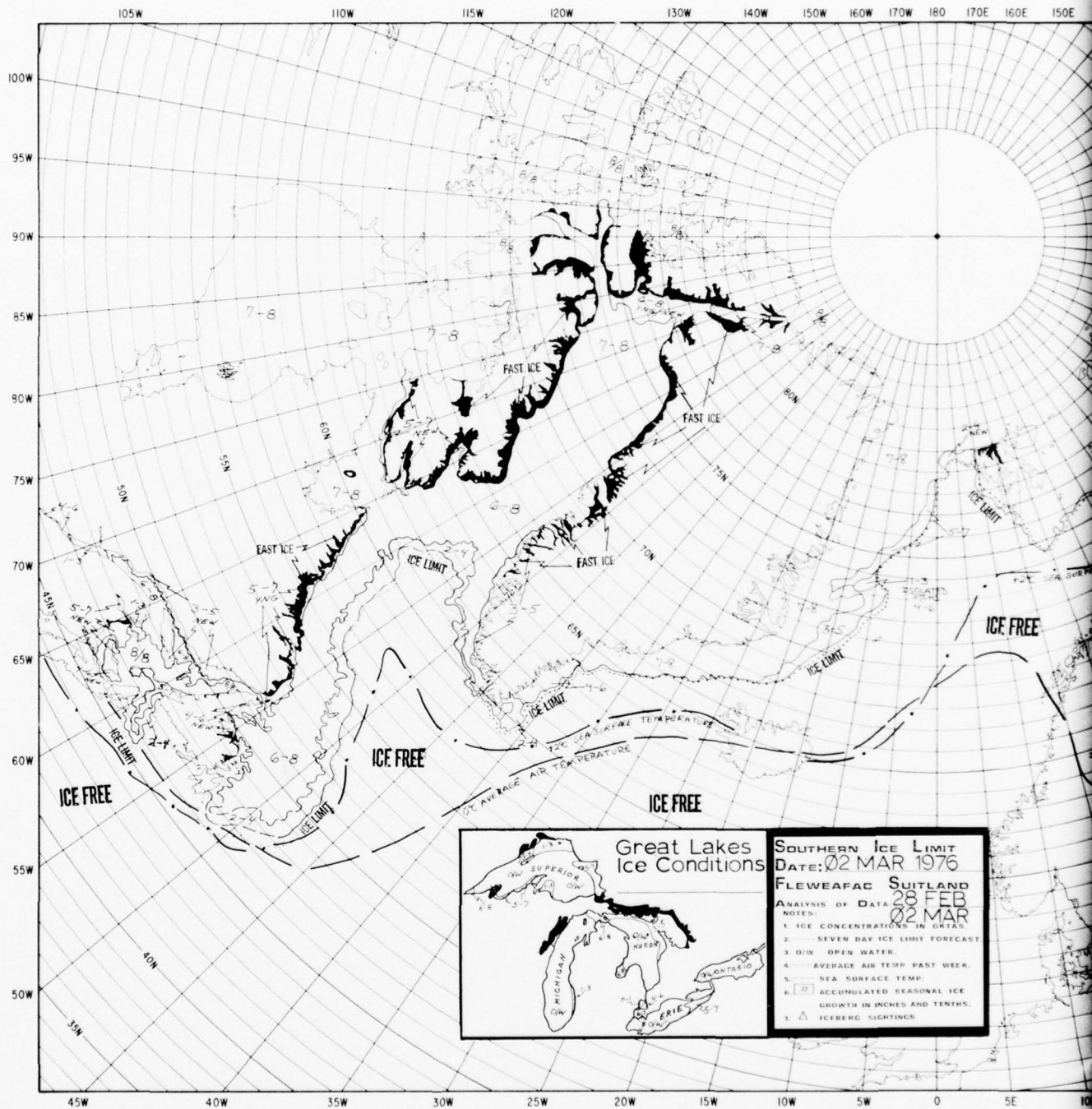
1. ICE CONCENTRATIONS IN OKTAS.
2. SEVEN DAY ICE LIMIT FORECAST
3. O/W OPEN WATER.
4. AVERAGE AIR TEMP PAST WEEK.
5. SEA SURFACE TEMP.
6. [#] ACCUMULATED SEASONAL ICE GROWTH IN INCHES AND TENTHS.
7. Δ ICEBERG SIGHTINGS.



2





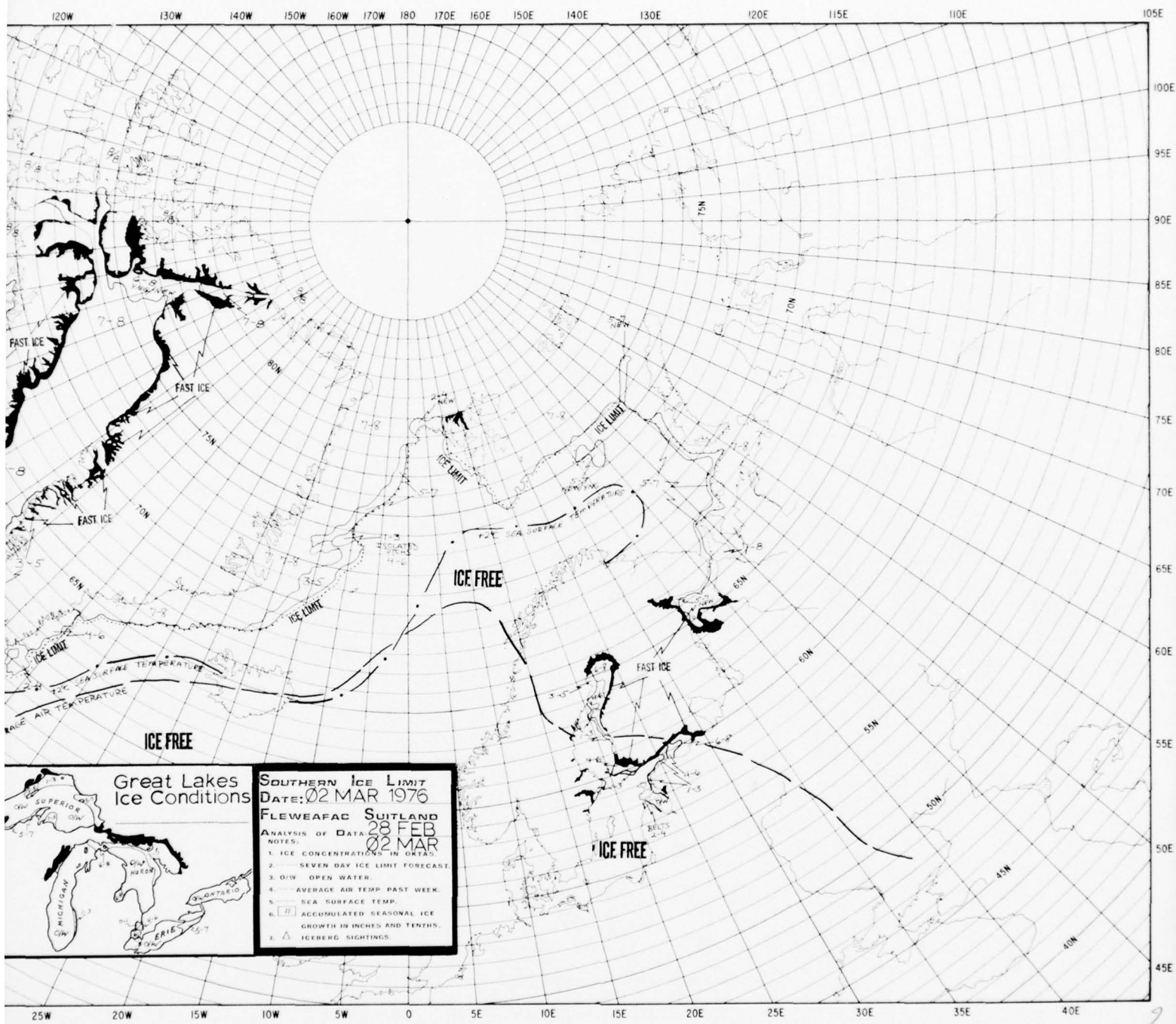


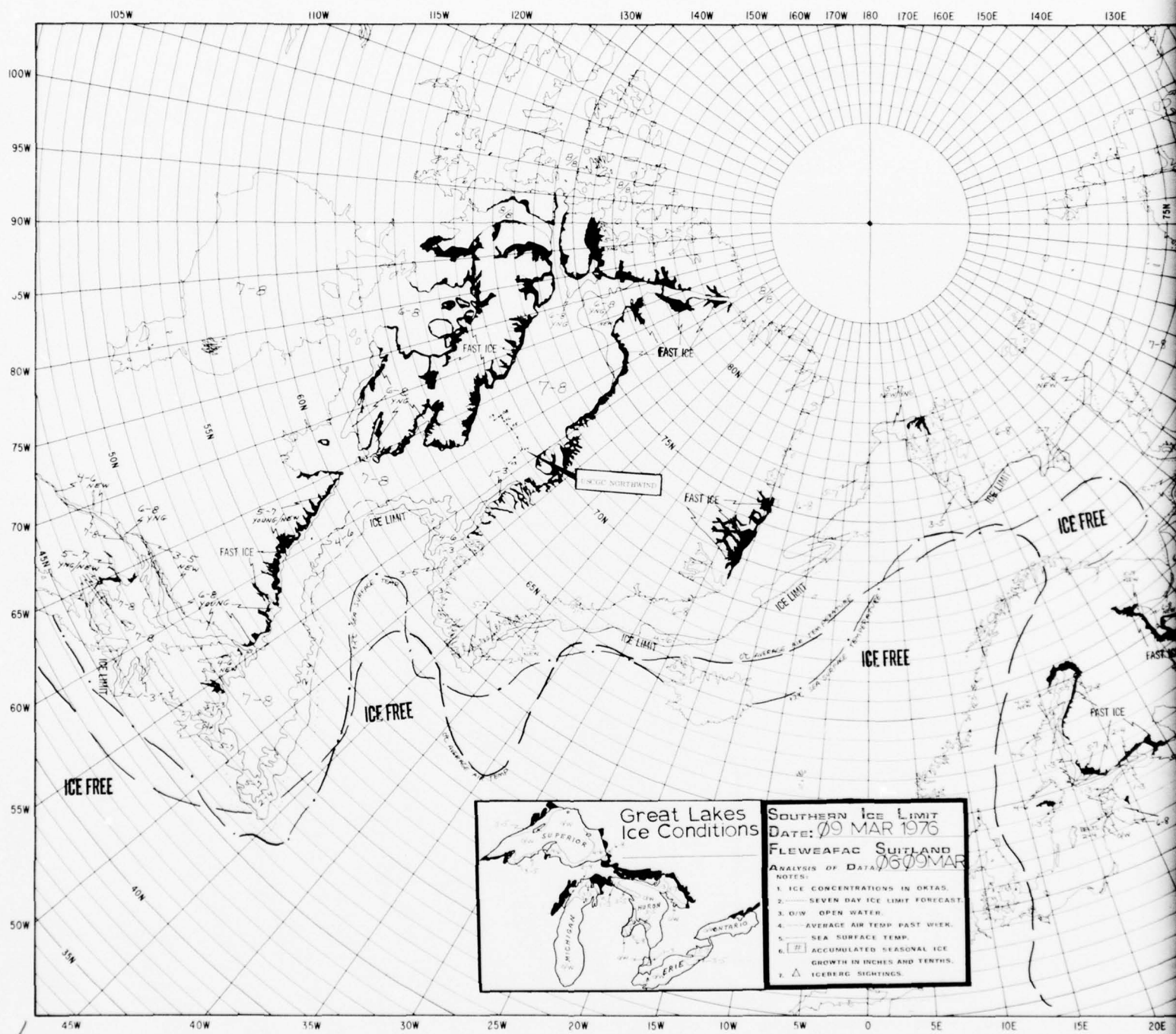
Great Lakes Ice Conditions

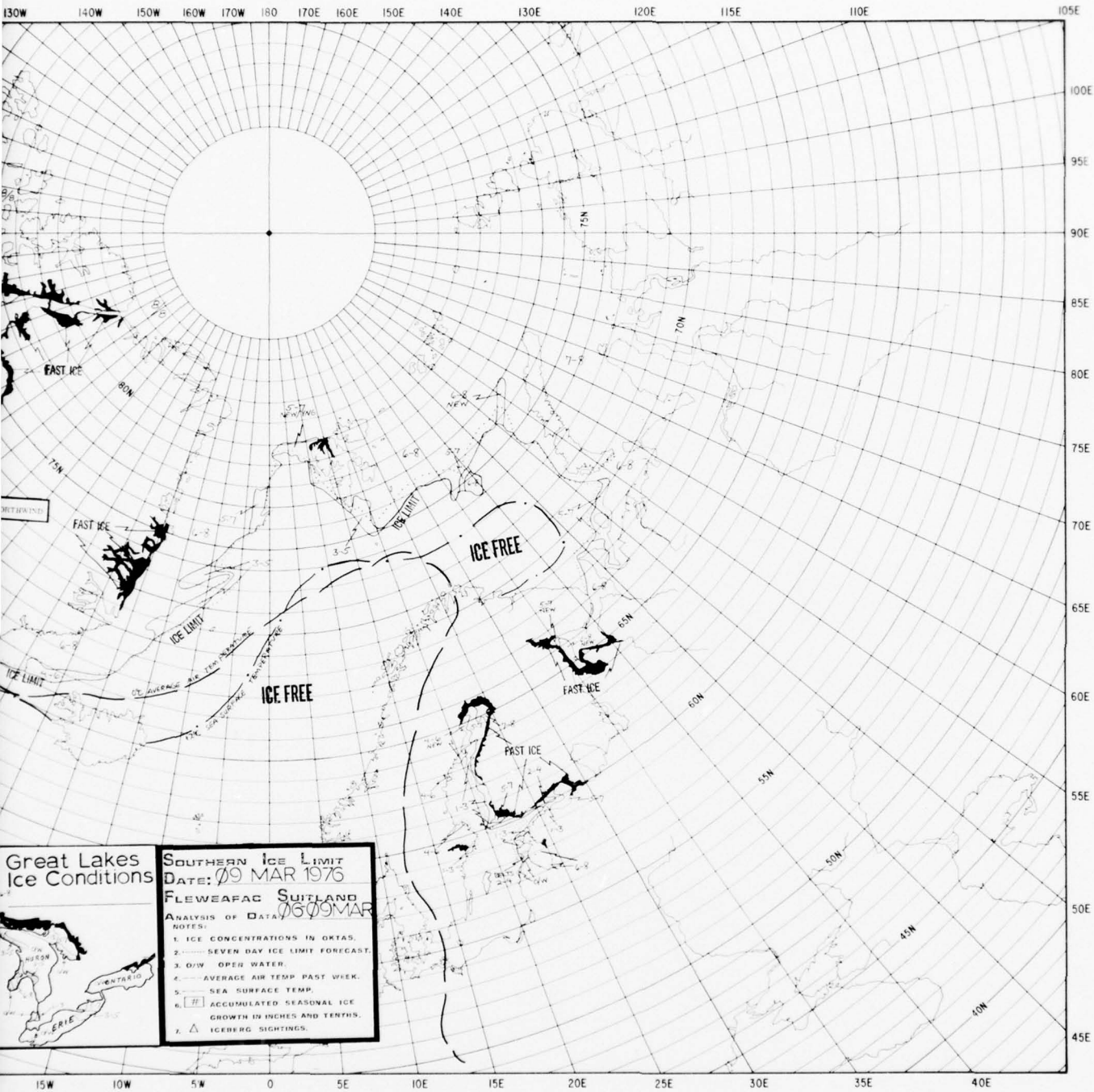
Southern Ice Limit
Date: 02 MAR 1976

FLEWEAFAC SUITLAND
28 FEB
02 MAR

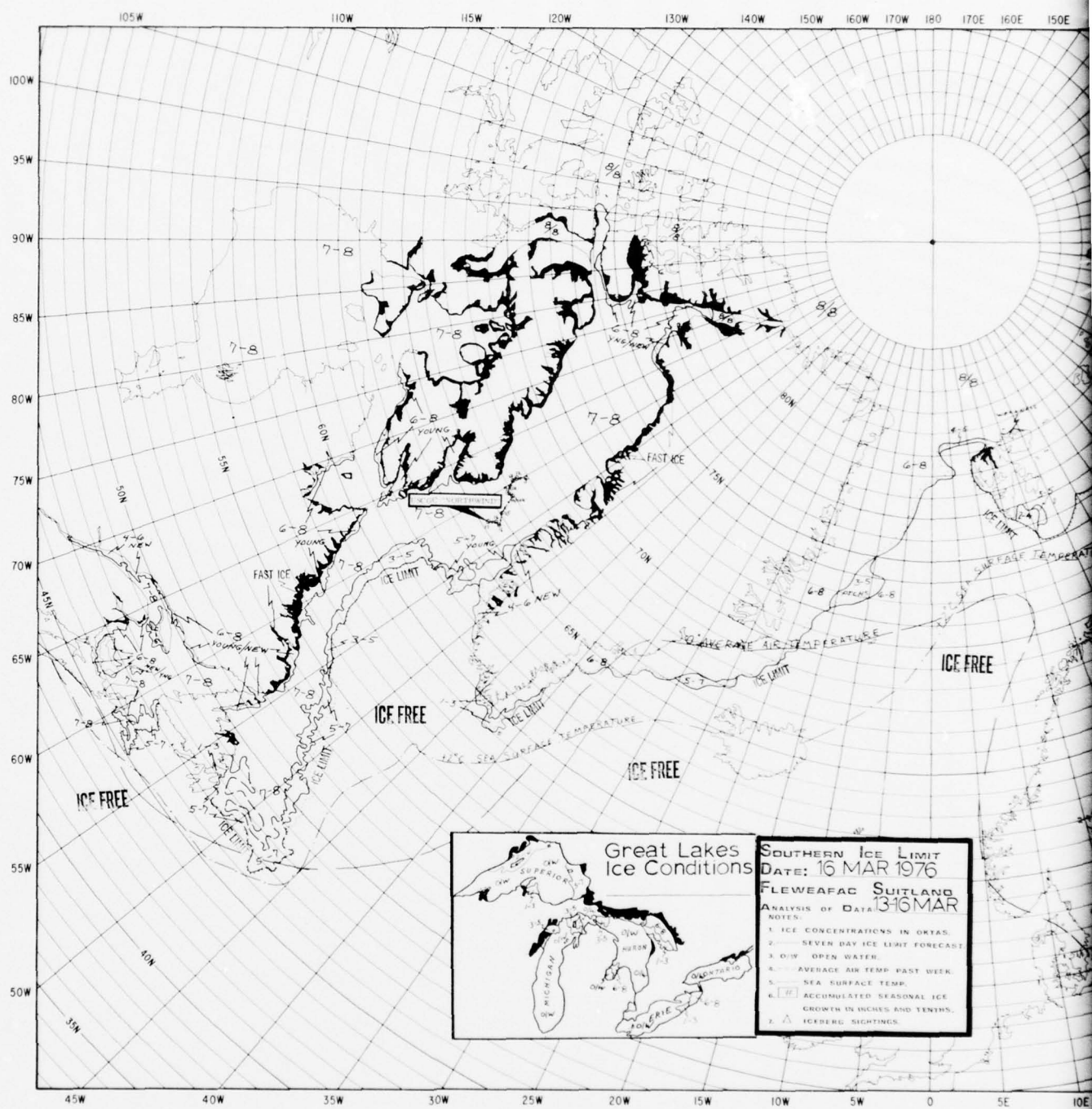
- ANALYSIS OF DATA
1. ICE CONCENTRATIONS IN ORTAS.
 2. SEVEN DAY ICE LIMIT FORECAST.
 3. O/W OPEN WATER.
 4. AVERAGE AIR TEMP. PAST WEEK.
 5. SEA SURFACE TEMP.
 6. ACCUMULATED SEASONAL ICE GROWTH IN INCHES AND TENTHS.
 7. ICEBERG SIGHTINGS.



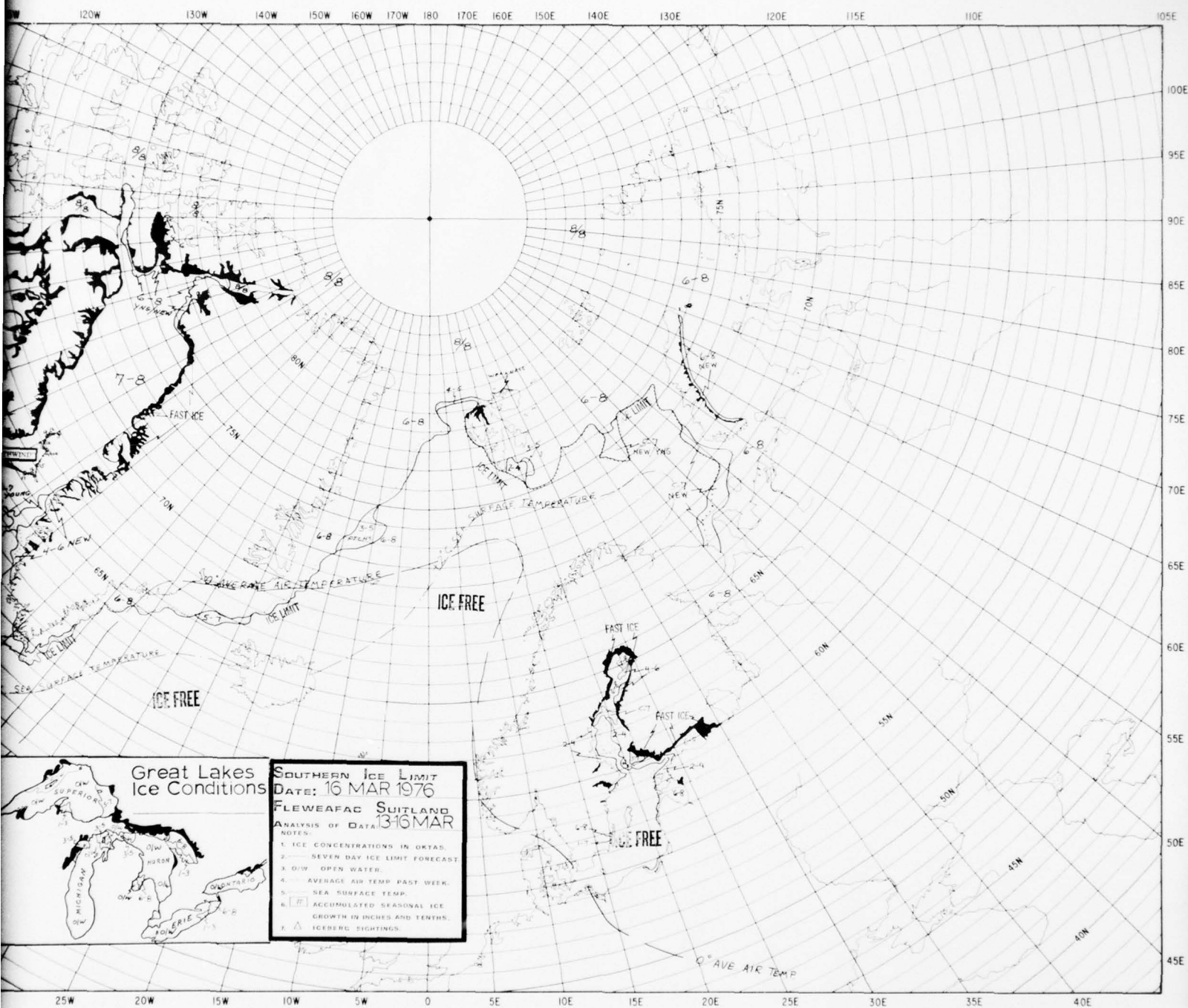


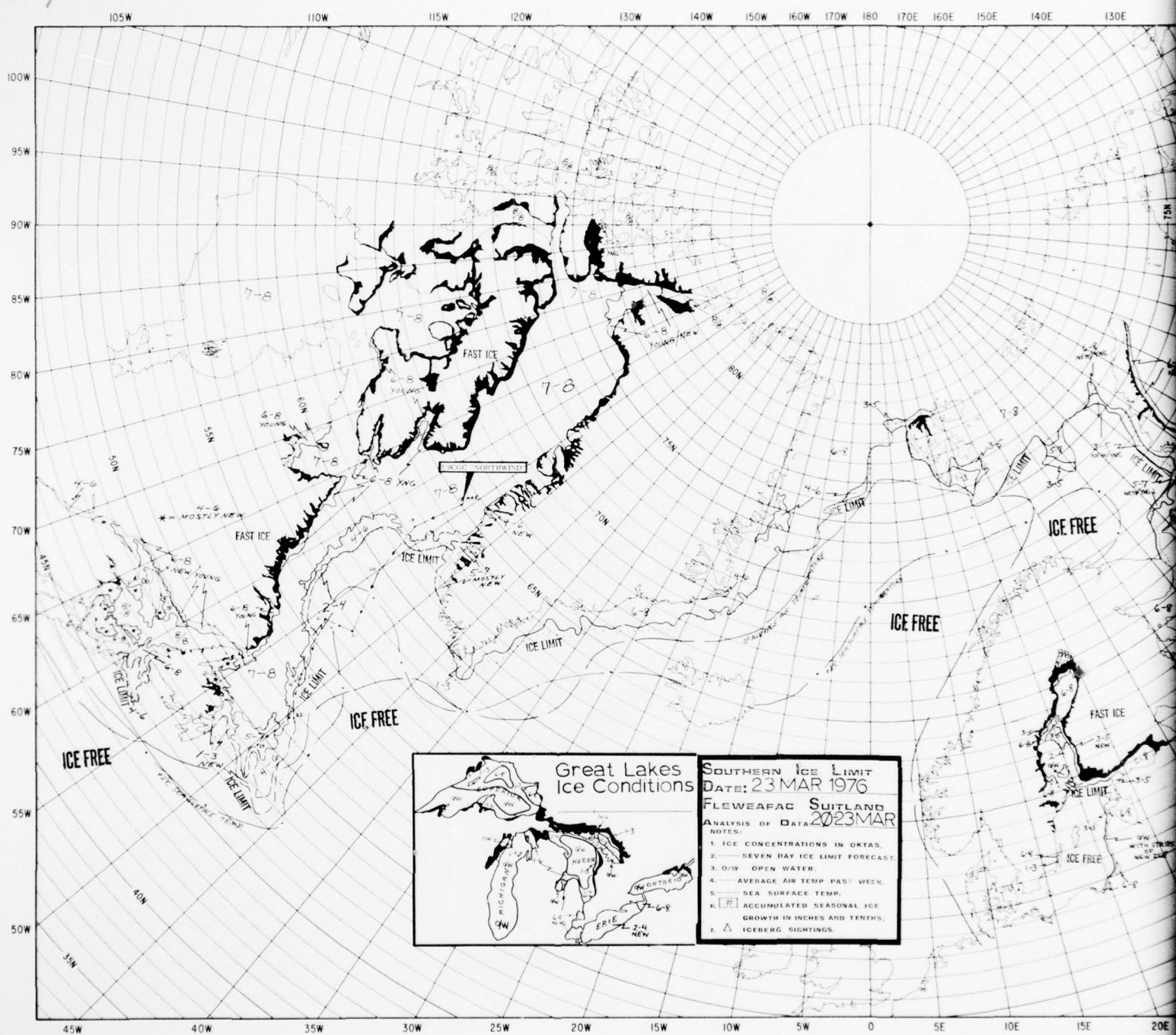


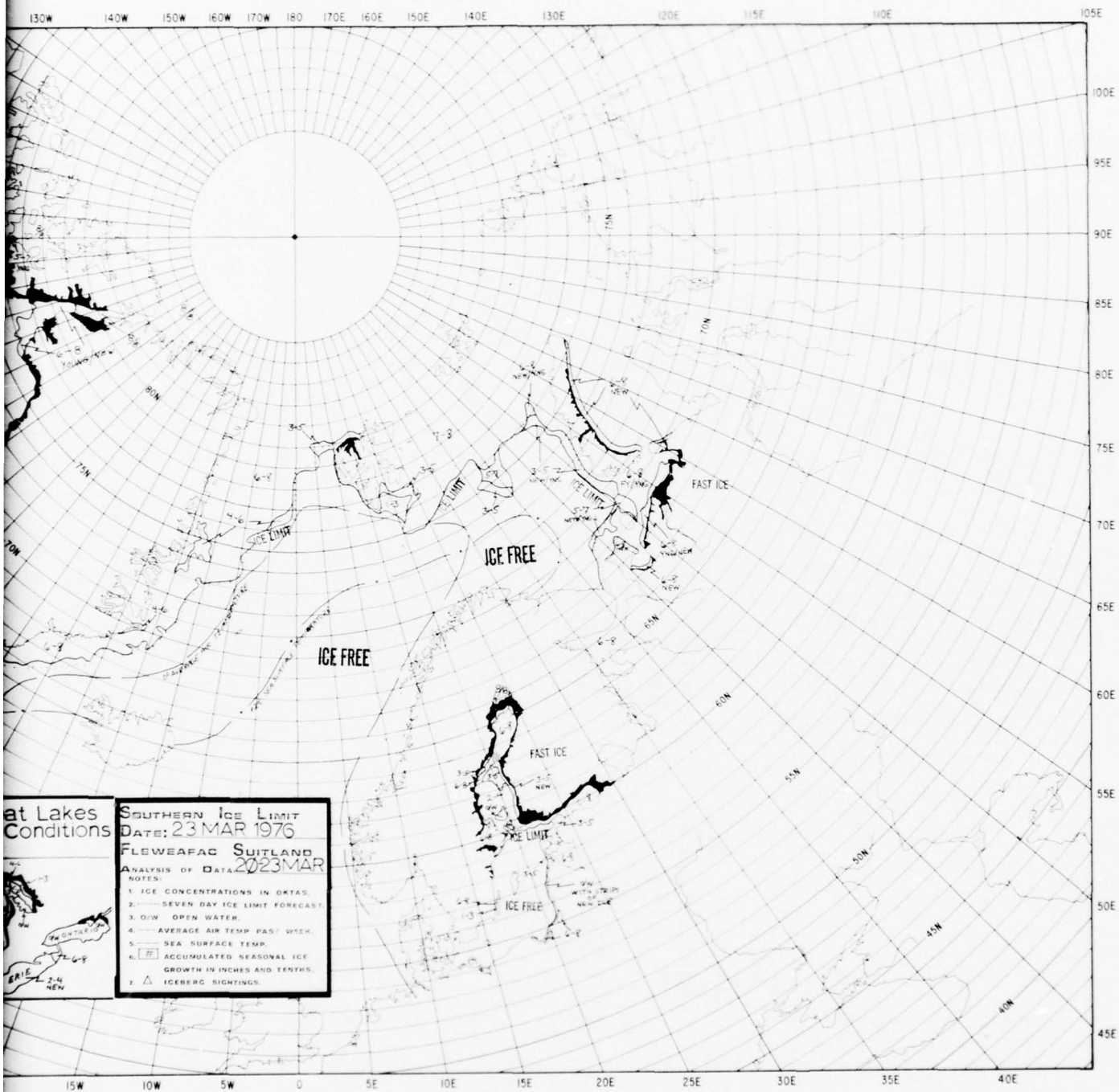
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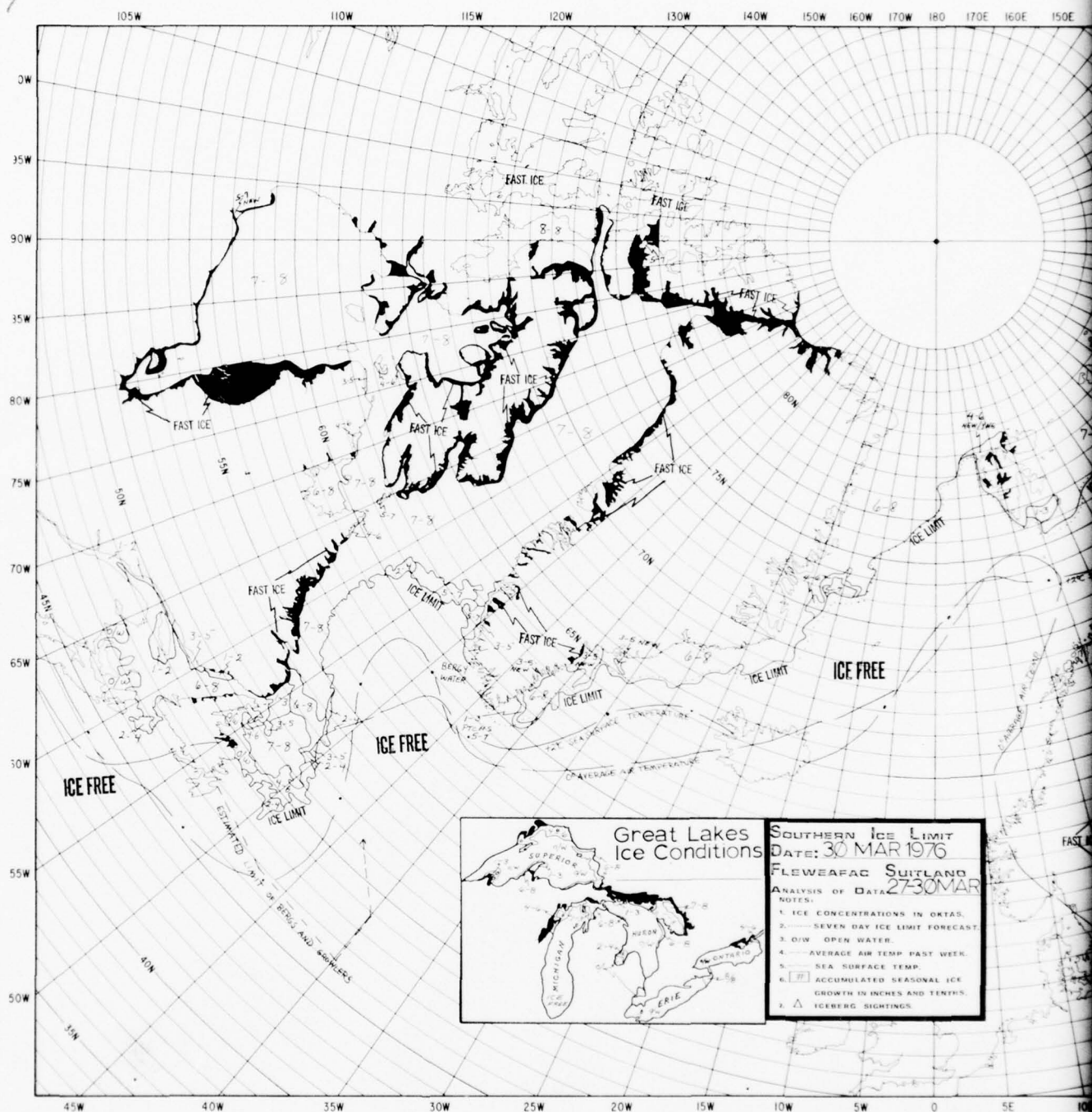


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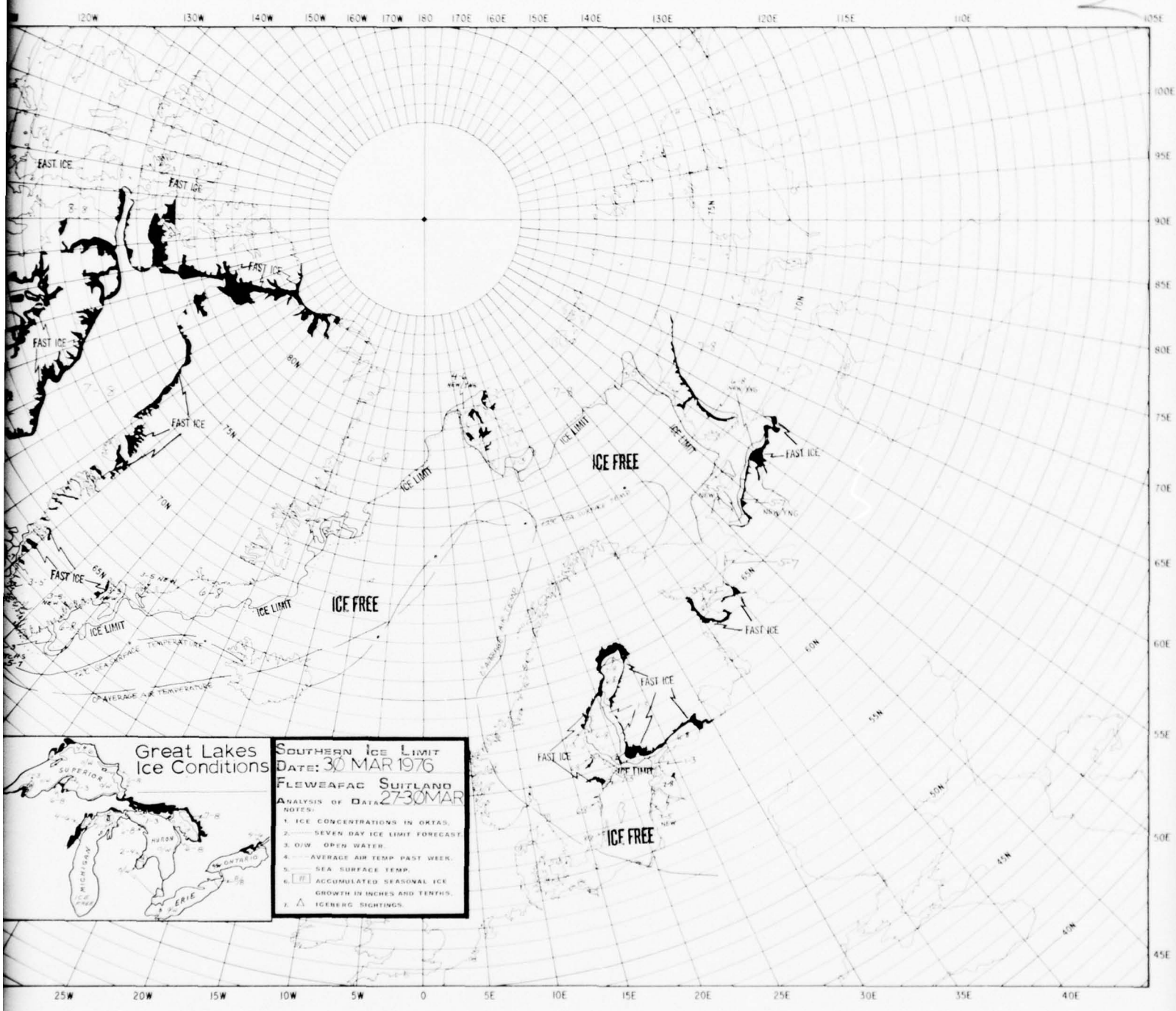


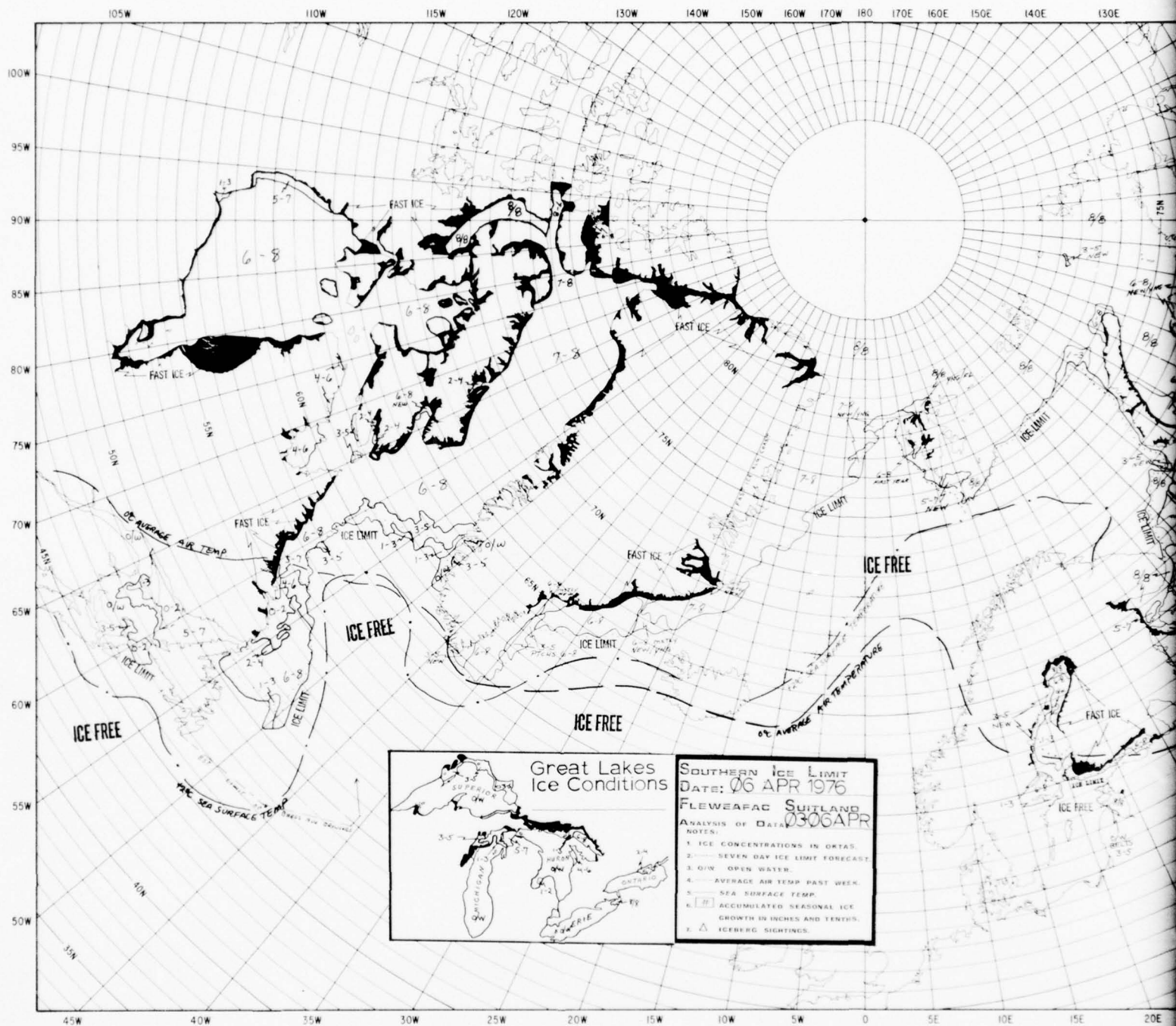


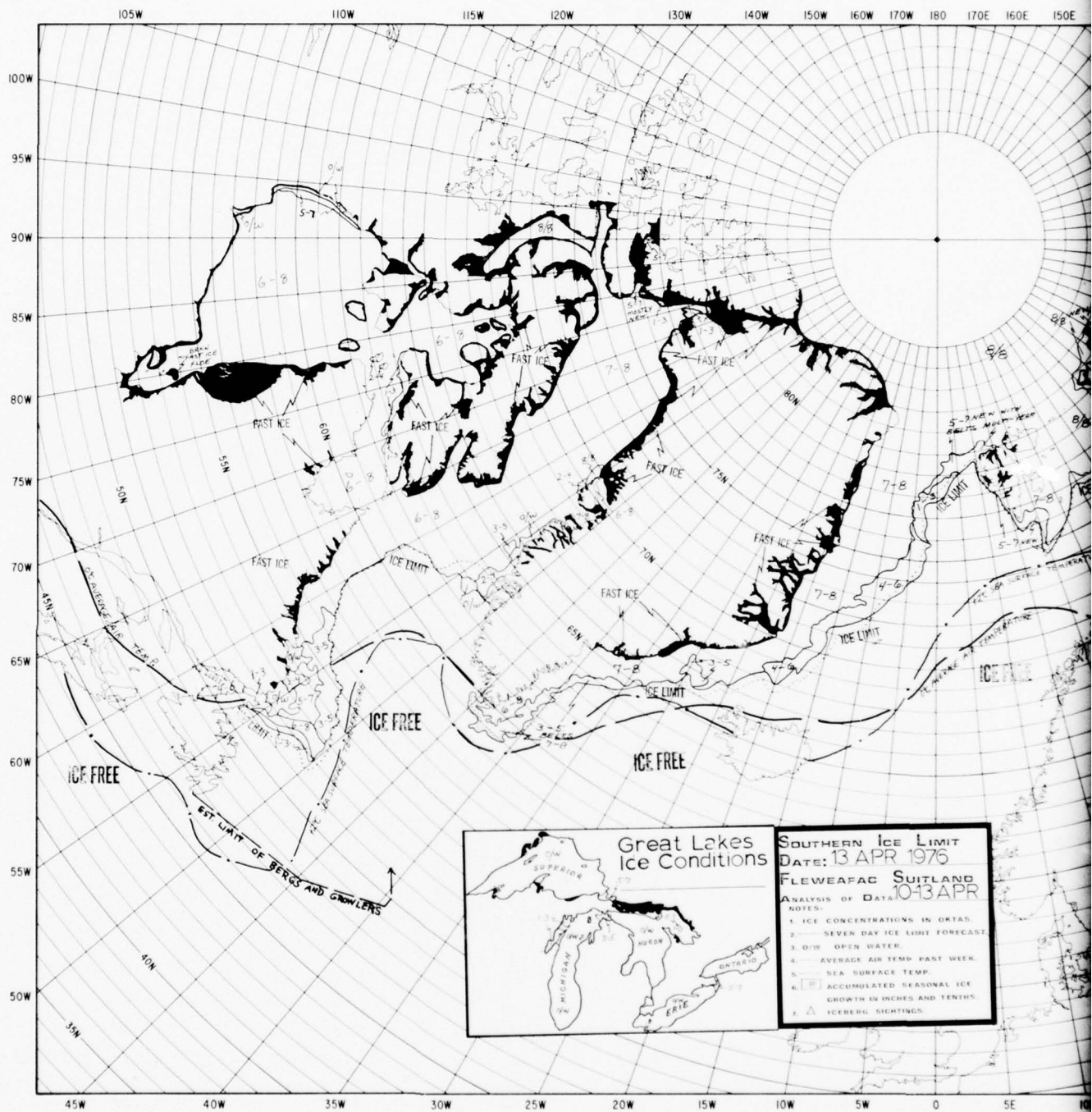




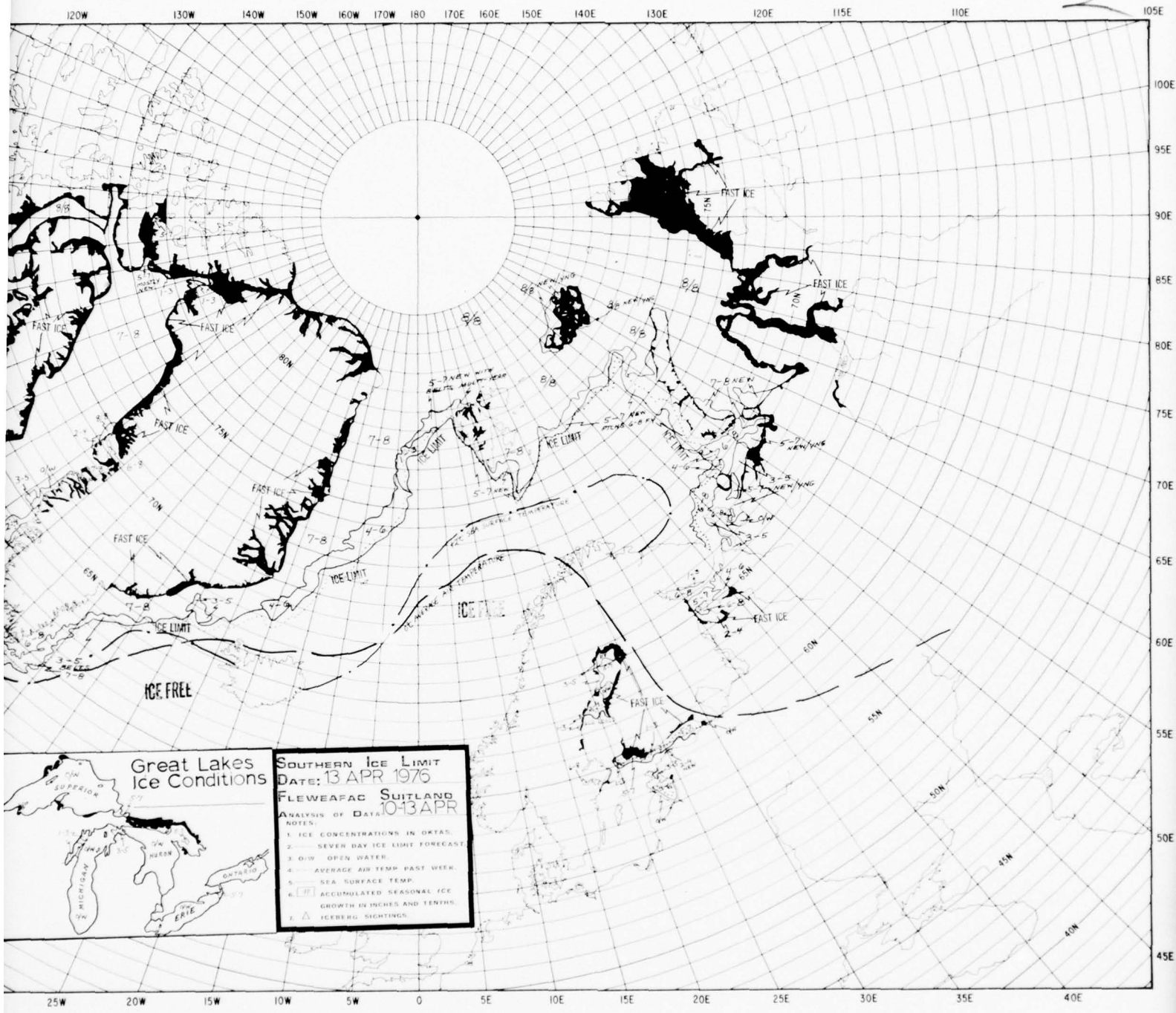
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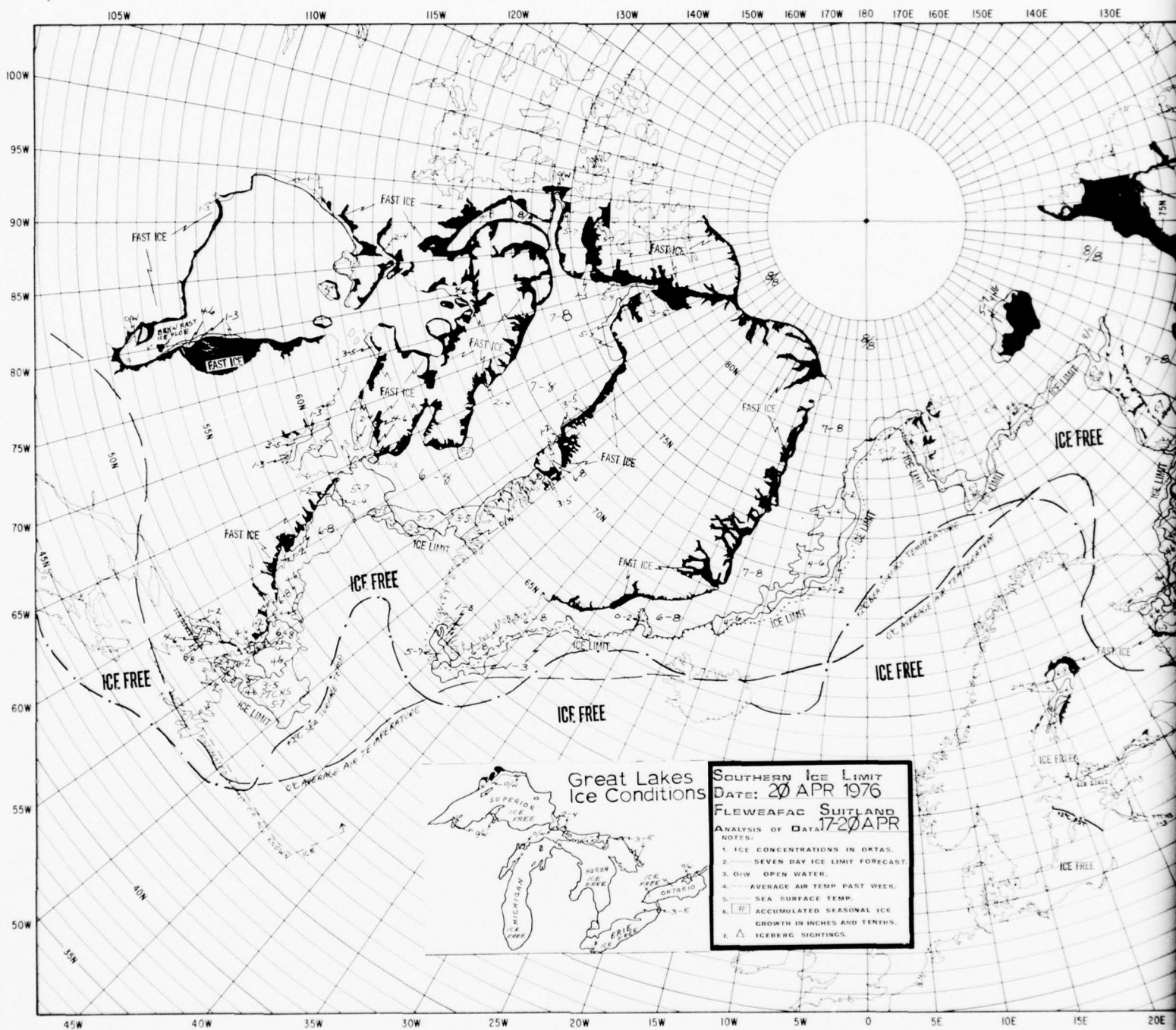


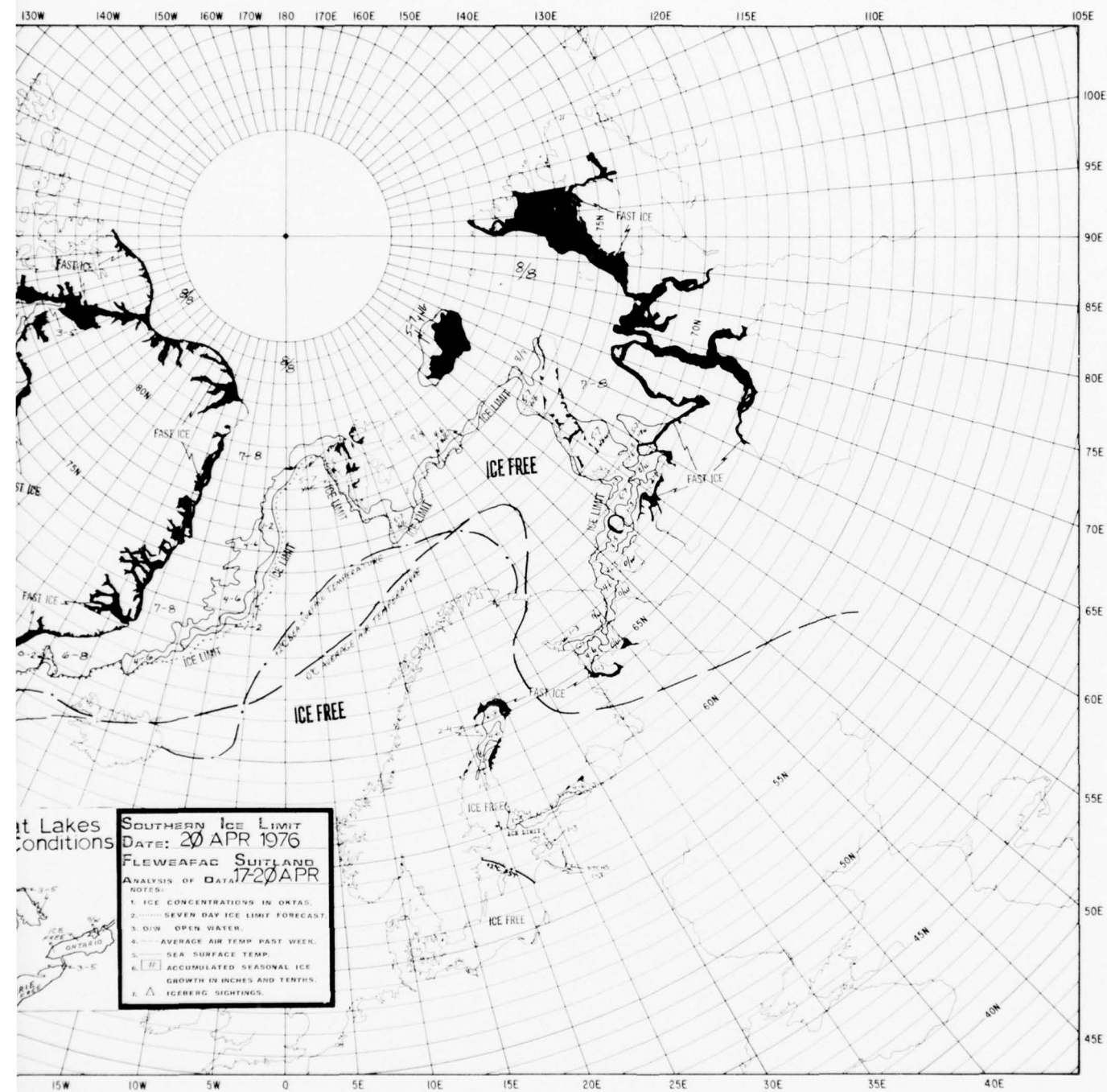


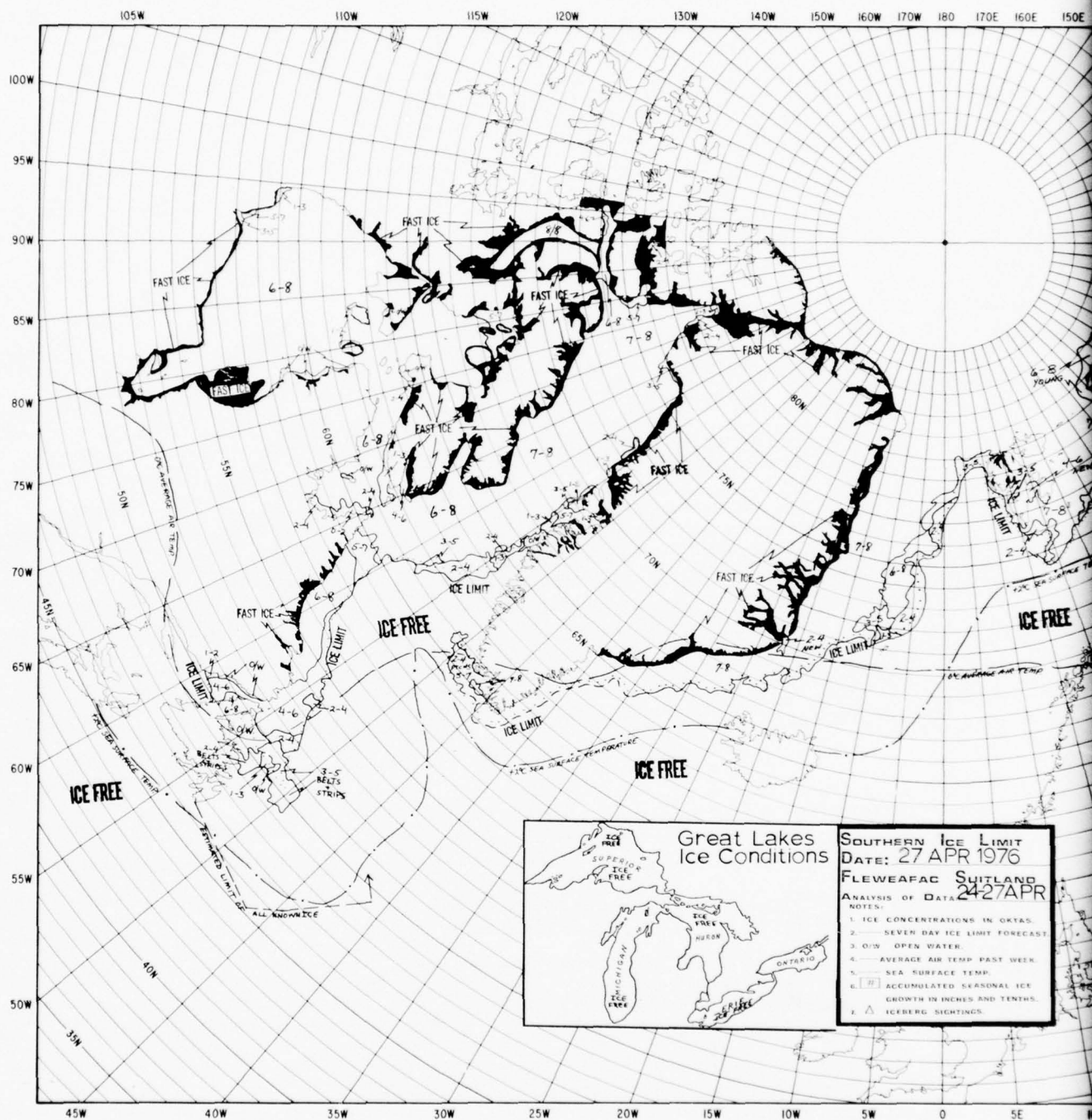


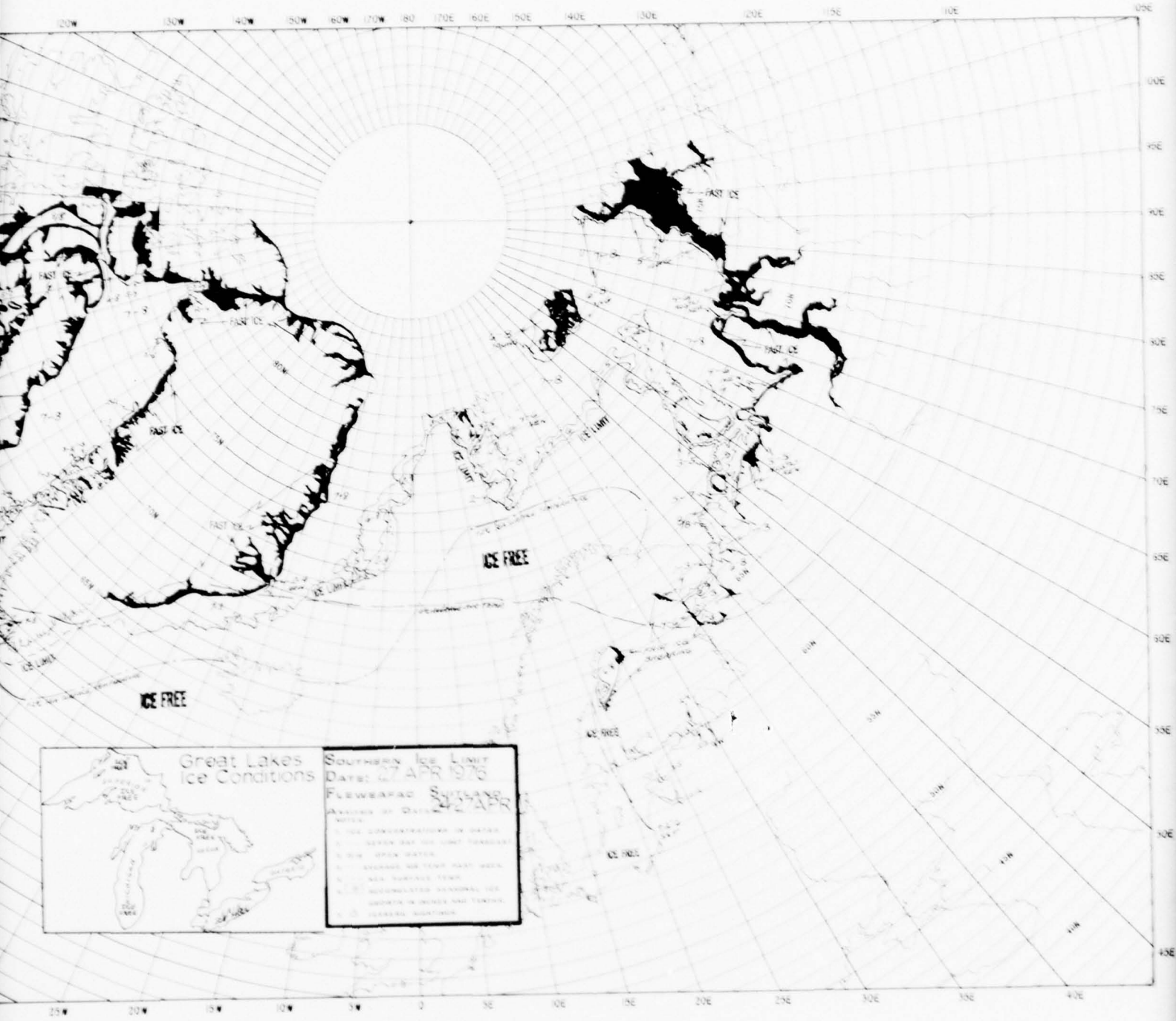
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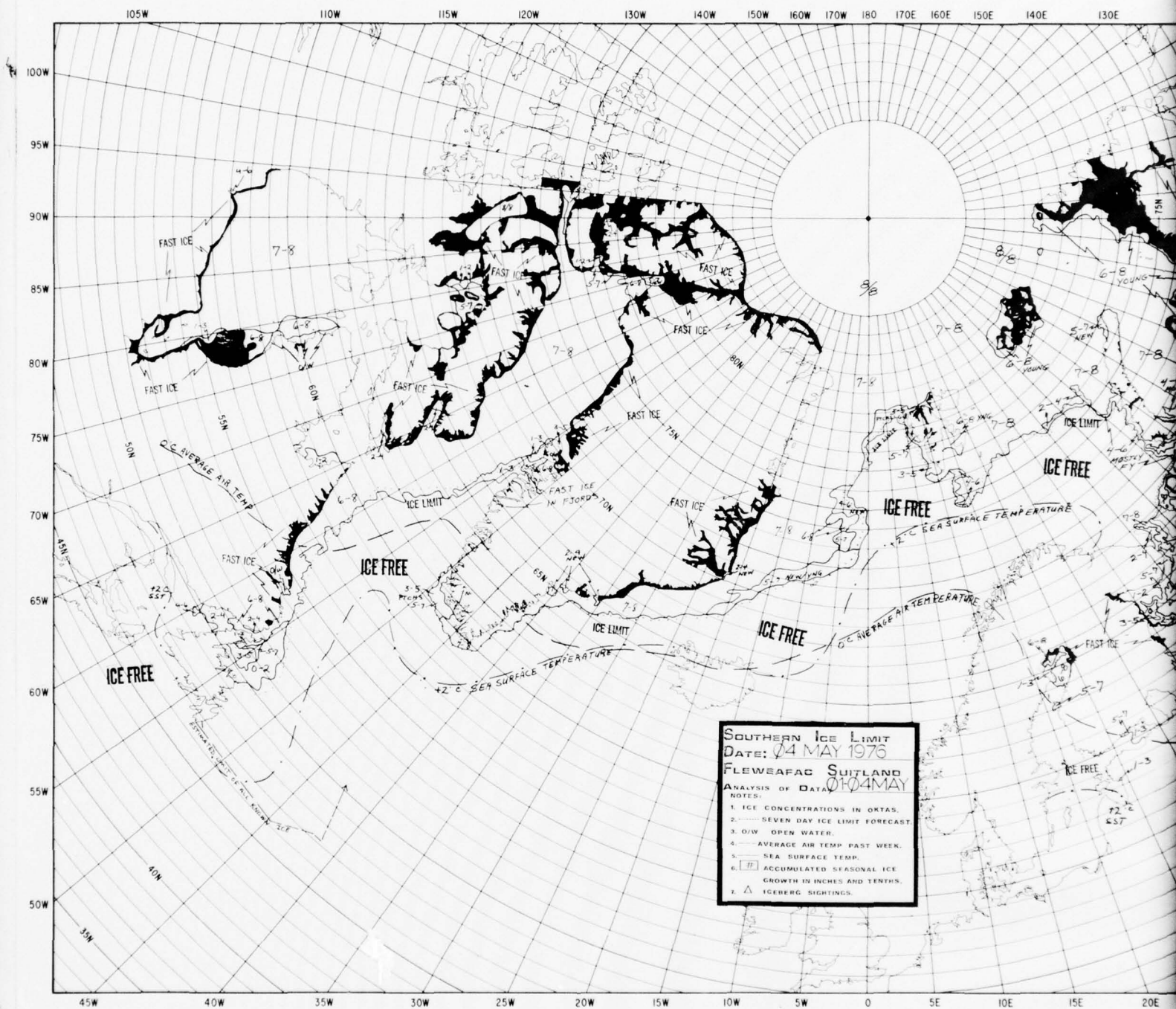


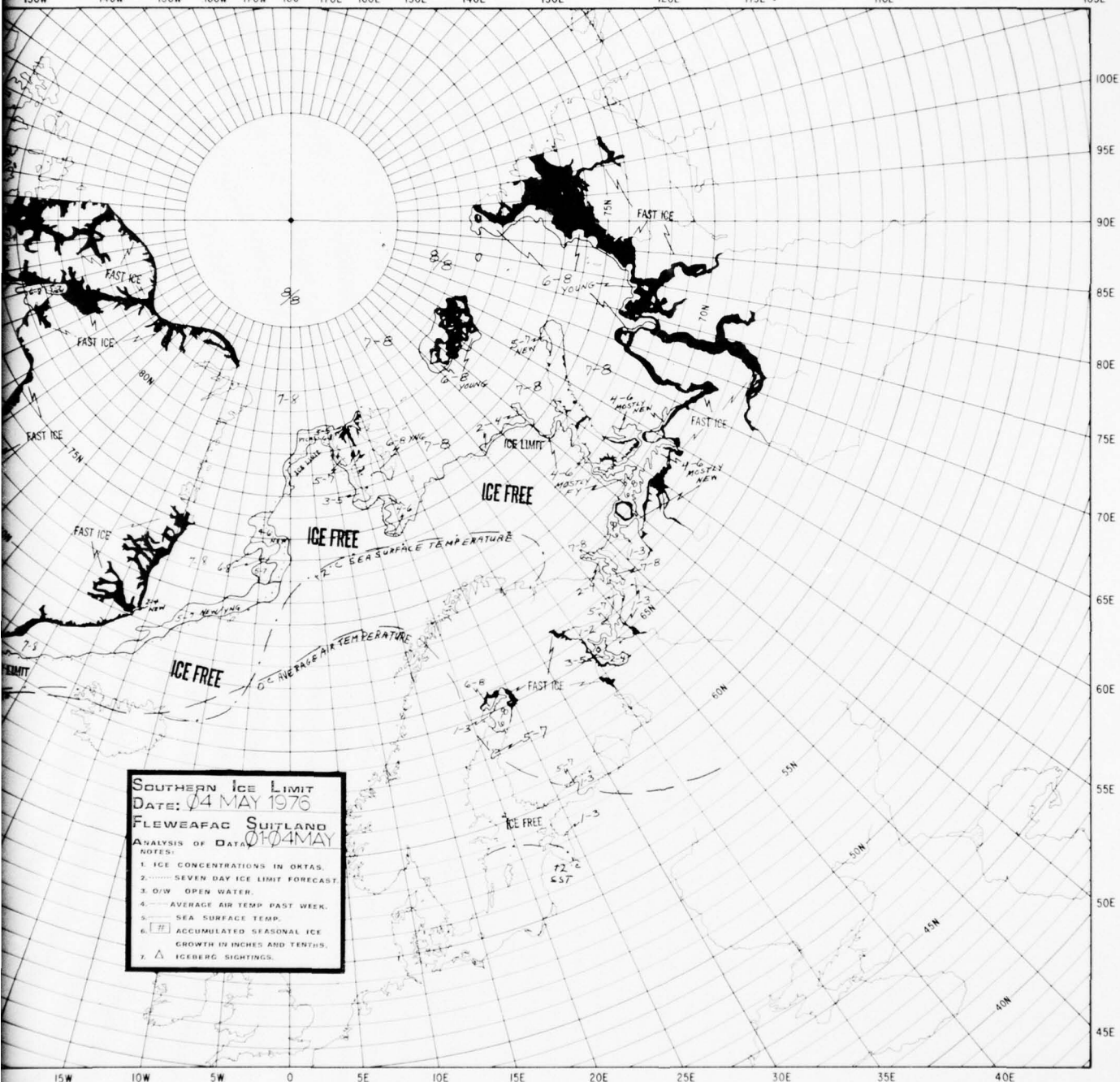




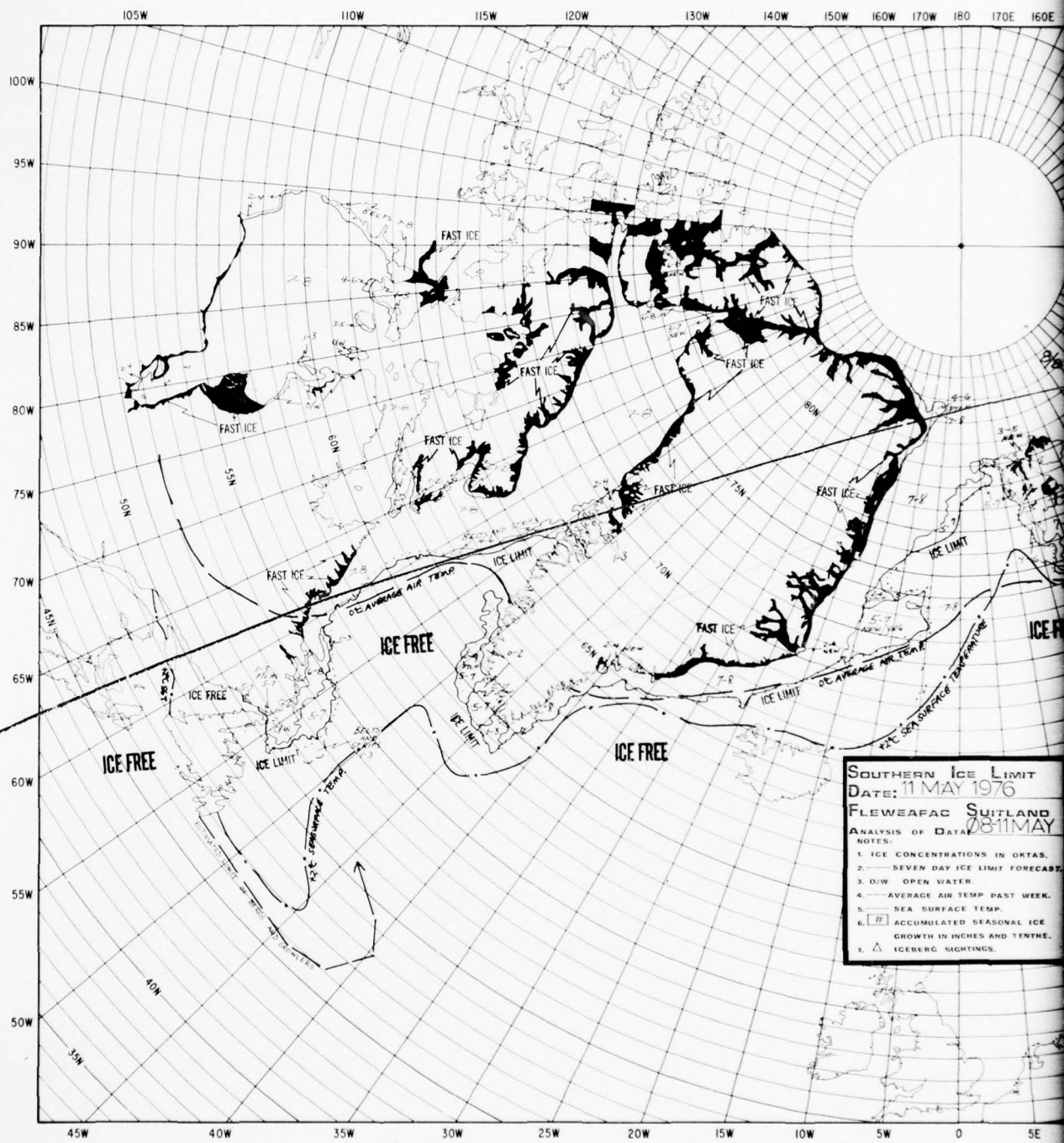


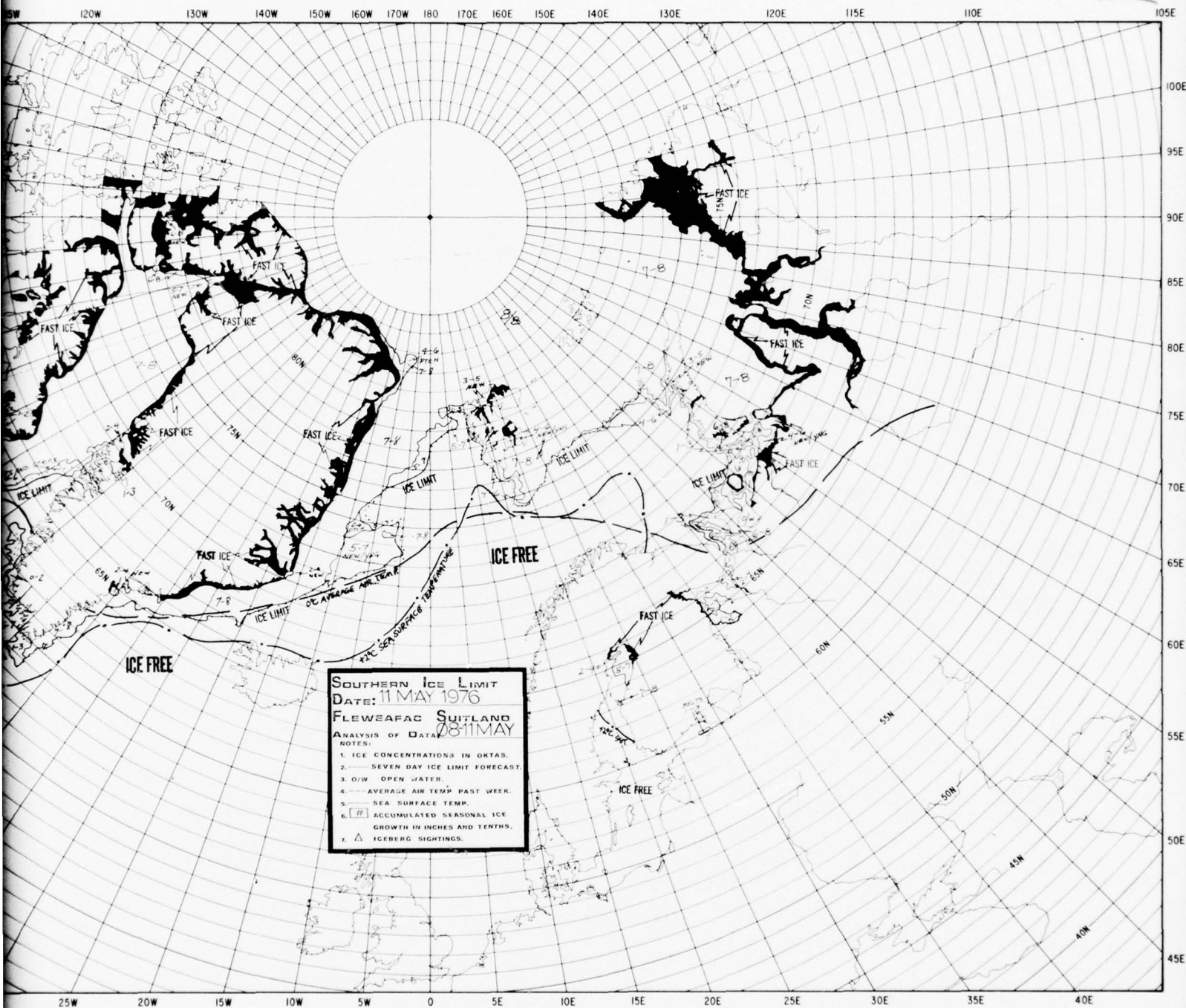


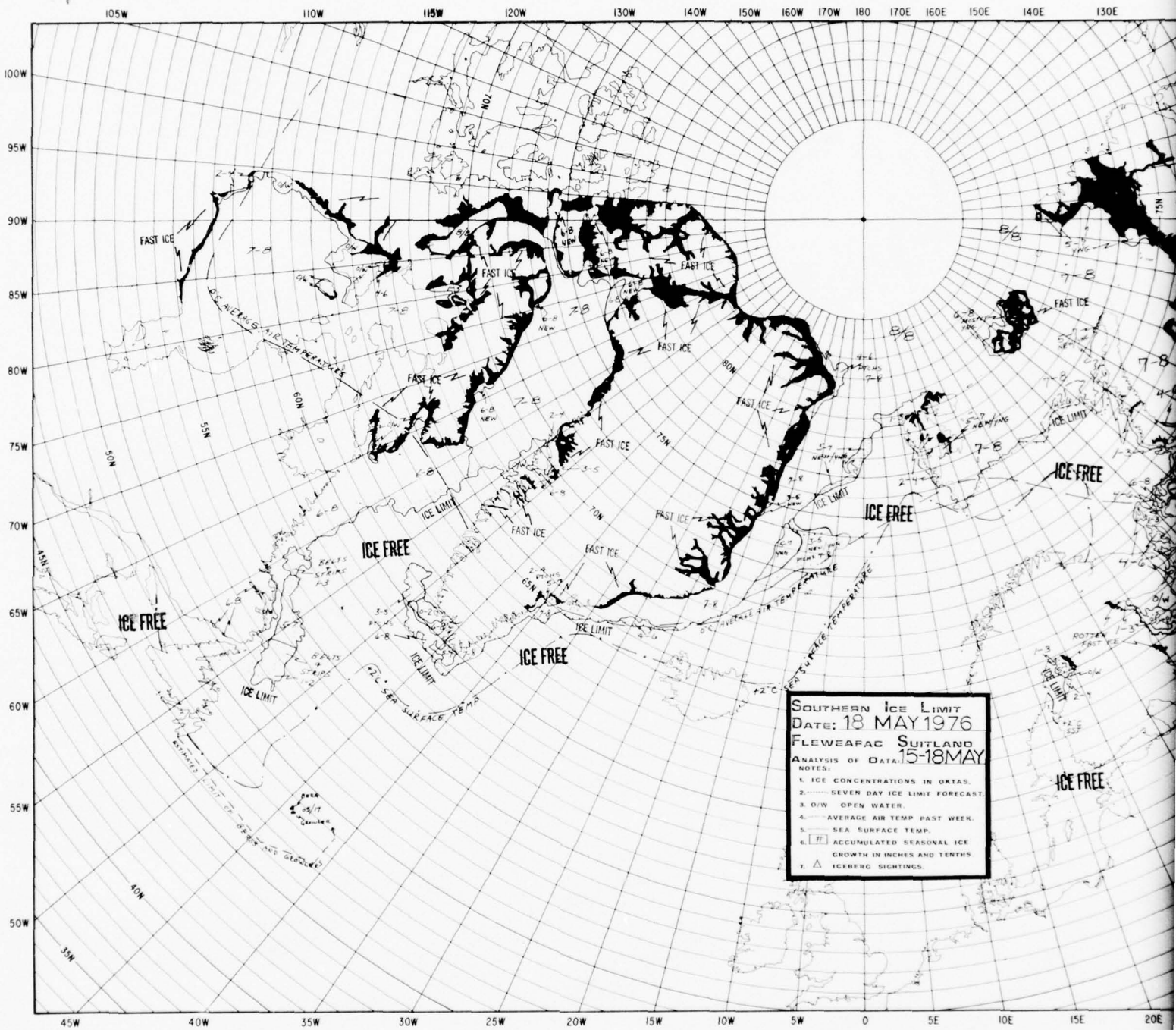


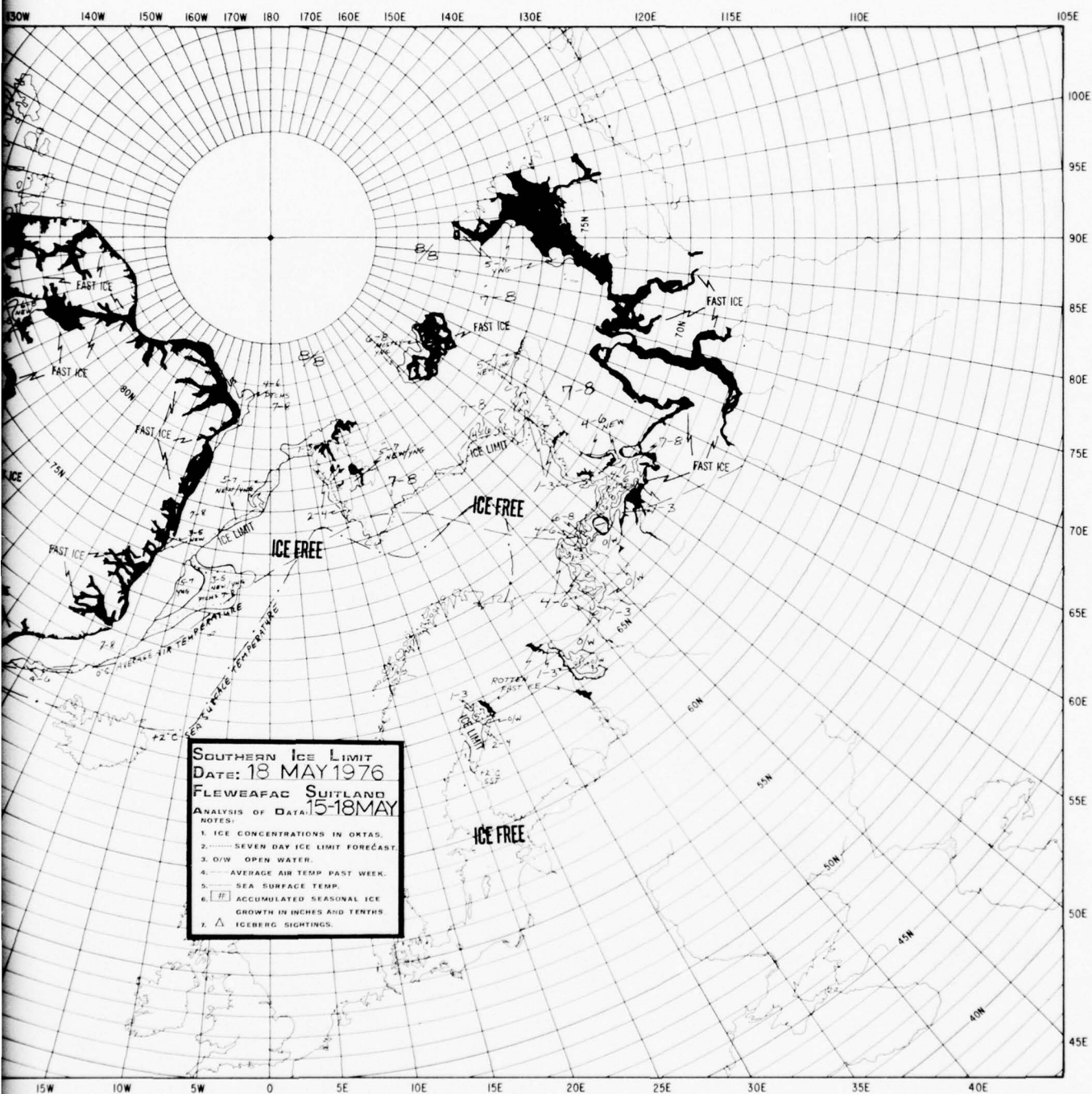


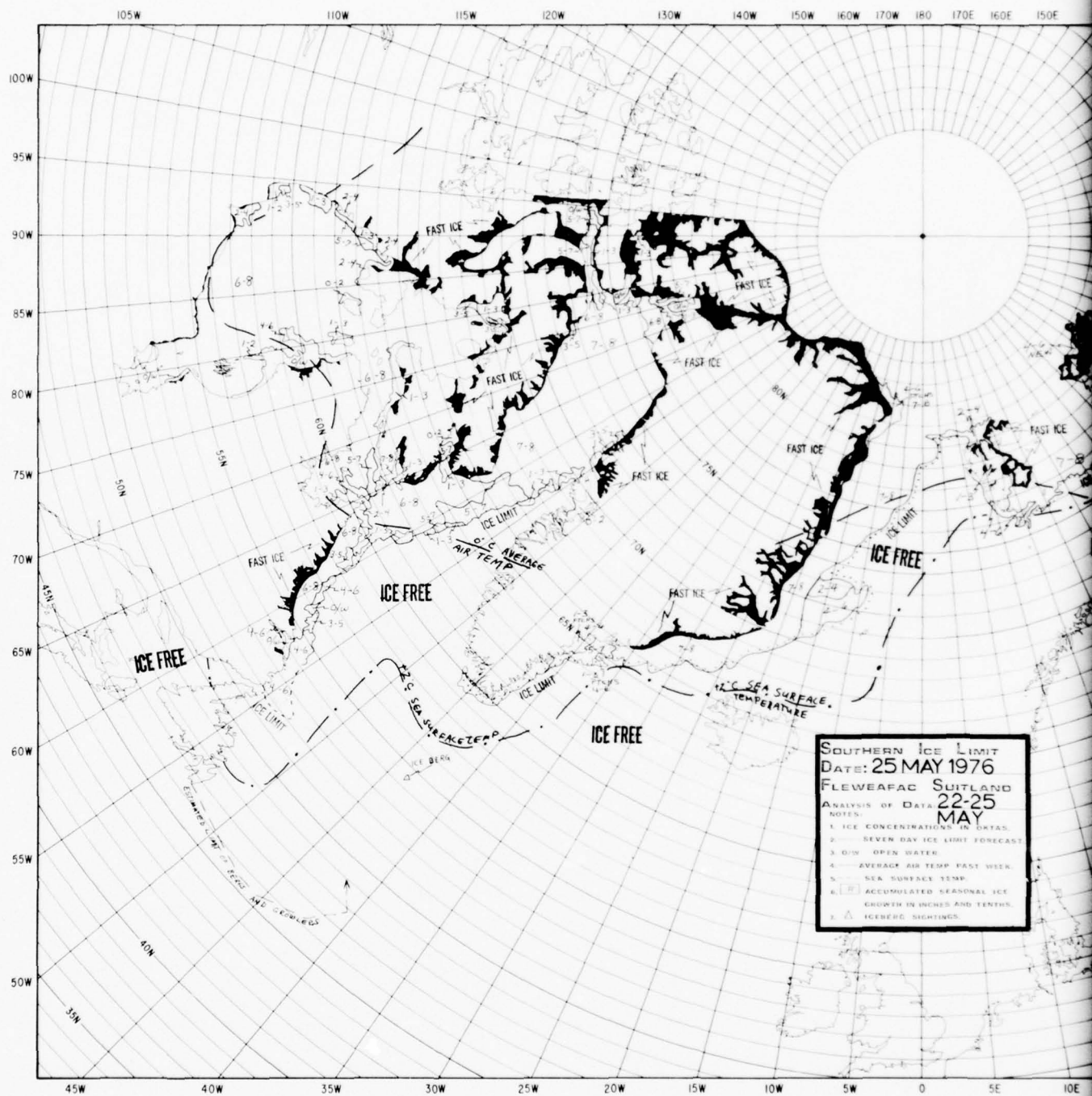
SOUTHERN ICE LIMIT
DATE: 04 MAY 1976
FLEWEAFC SUTLAND
ANALYSIS OF DATA 0404MAY
NOTES:
1. ICE CONCENTRATIONS IN OKTAS.
2. SEVEN DAY ICE LIMIT FORECAST
3. D/OW OPEN WATER.
4. AVERAGE AIR TEMP PAST WEEK.
5. SEA SURFACE TEMP.
6. ACCUMULATED SEASONAL ICE
GROWTH IN INCHES AND TENTHS.
7. ICEBERG SIGHTINGS.

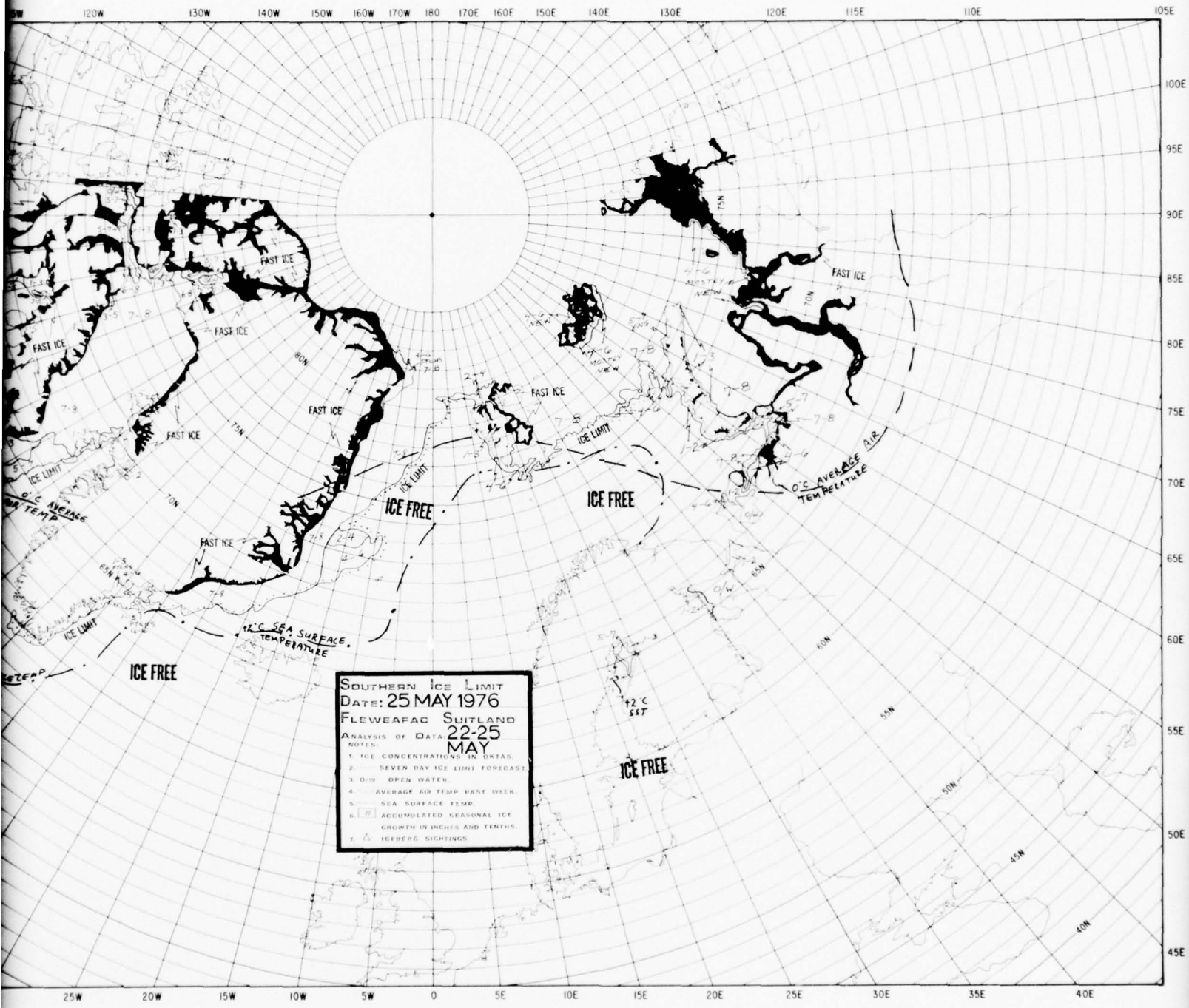


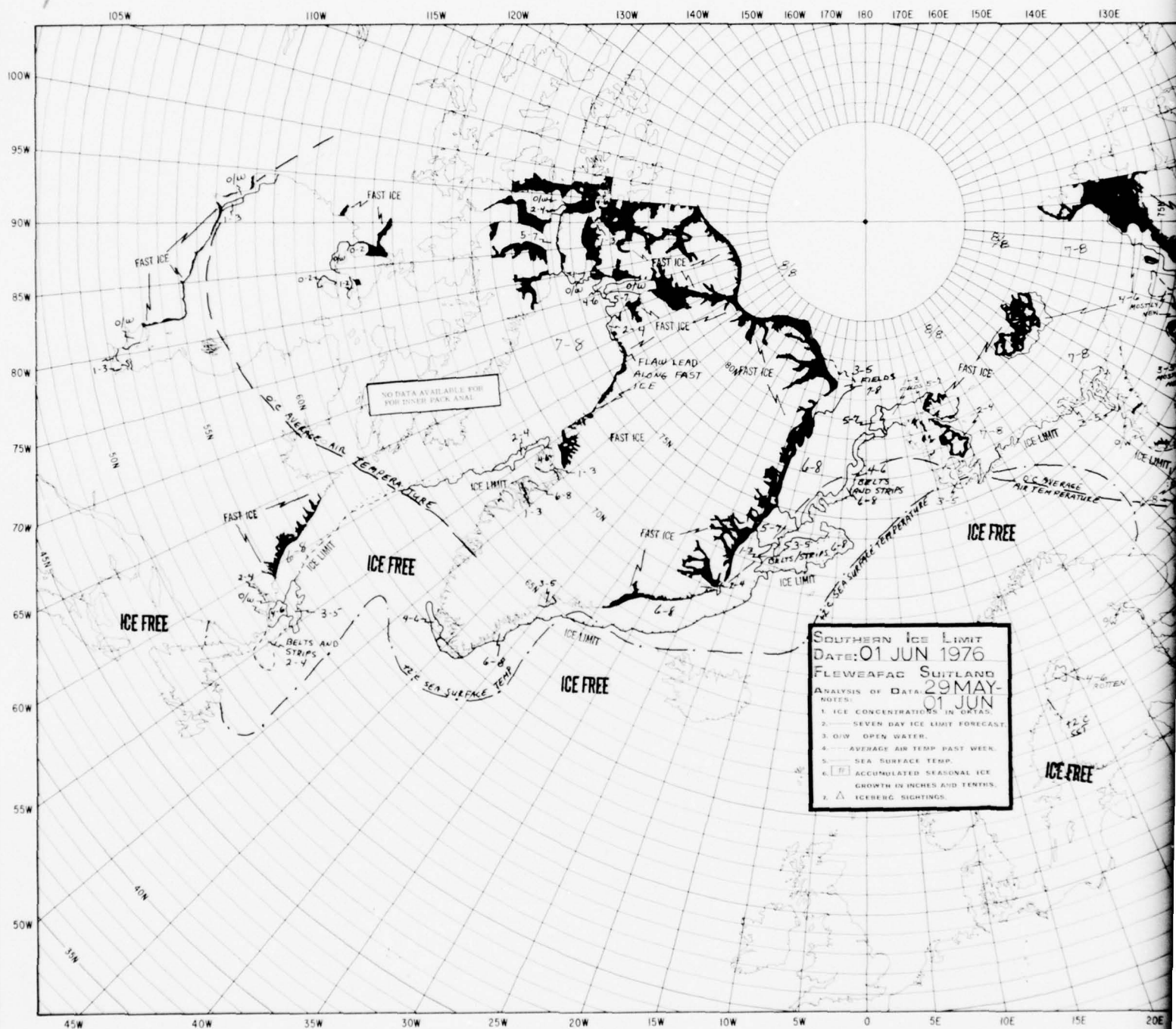




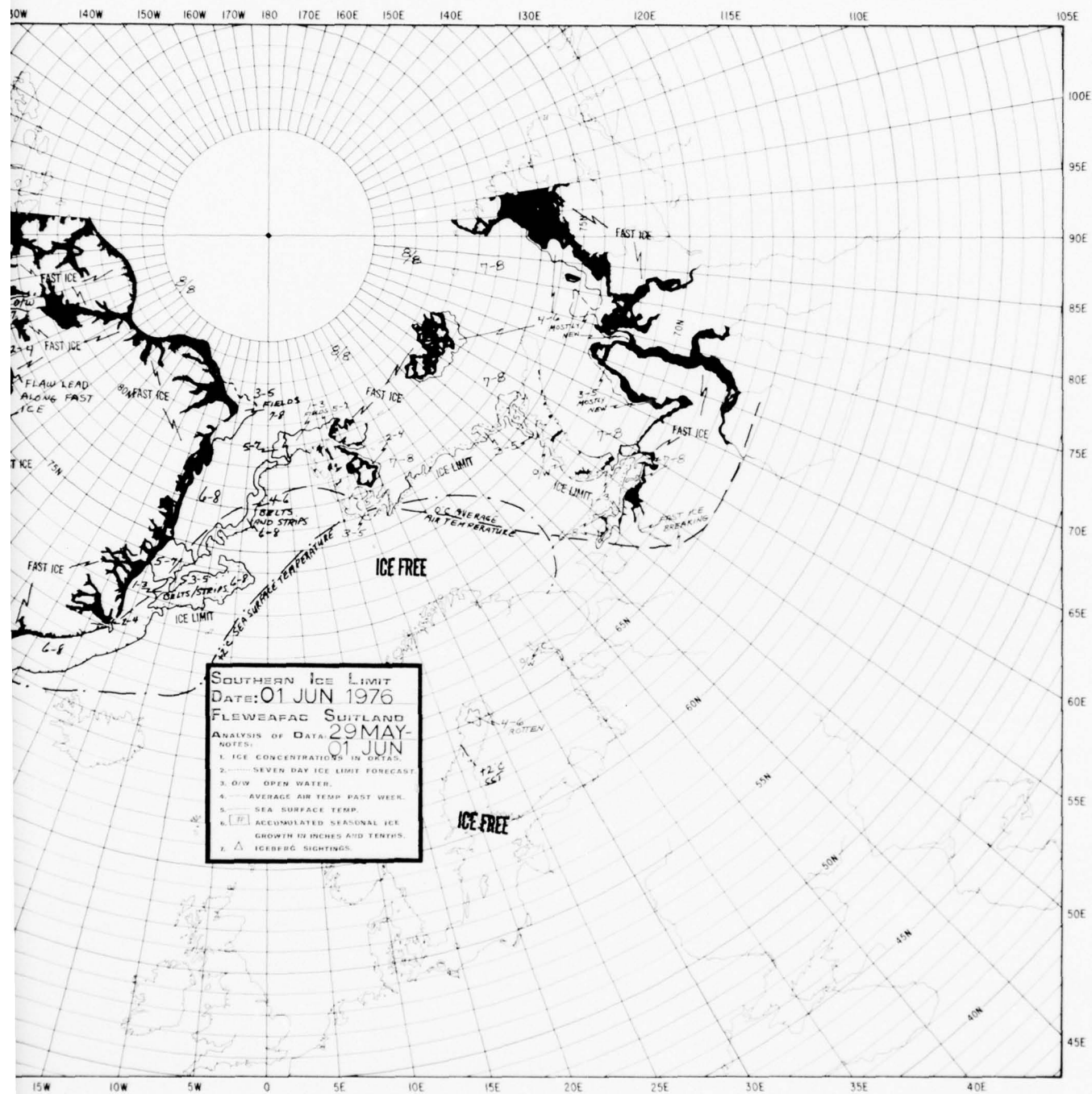


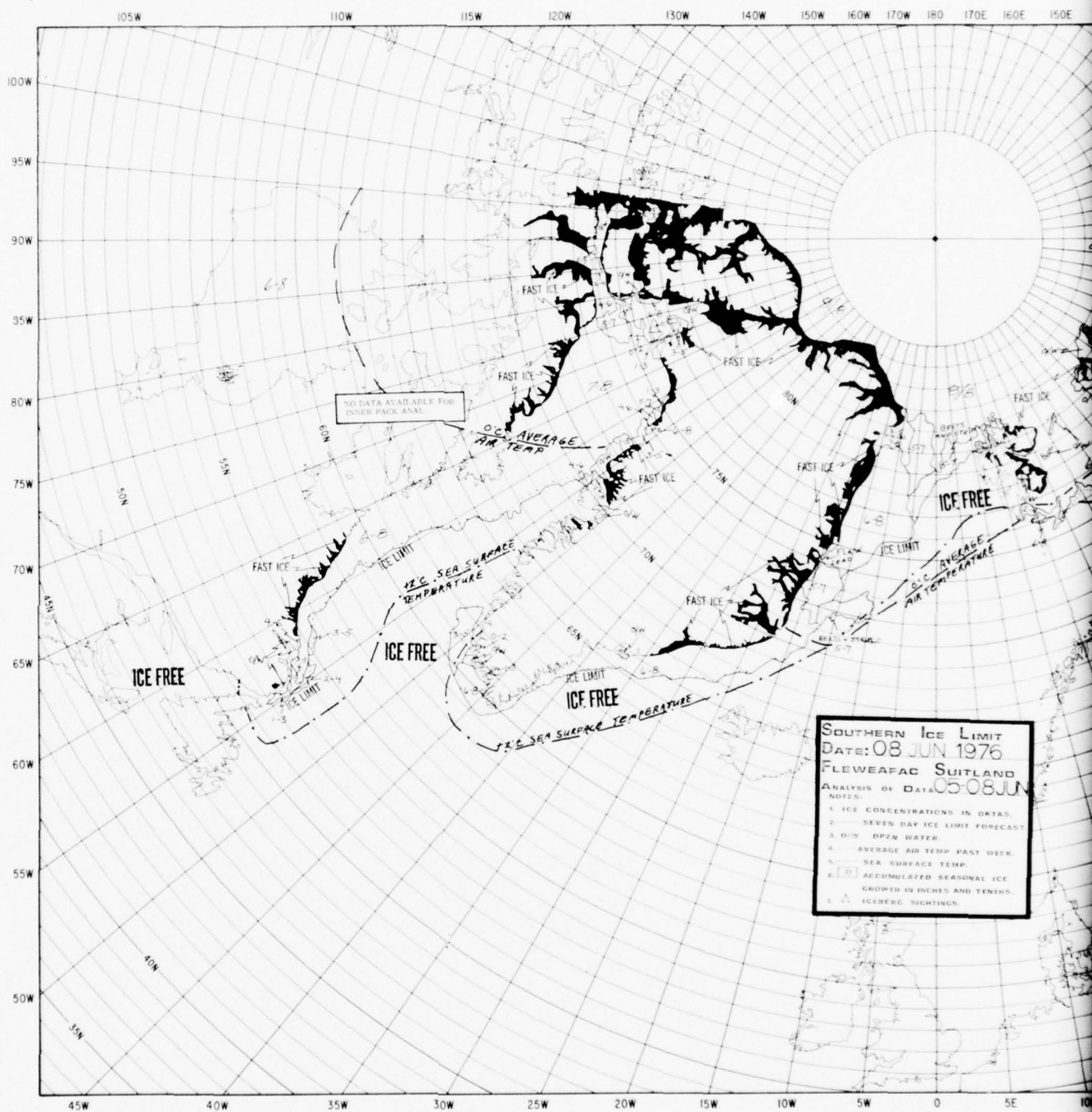




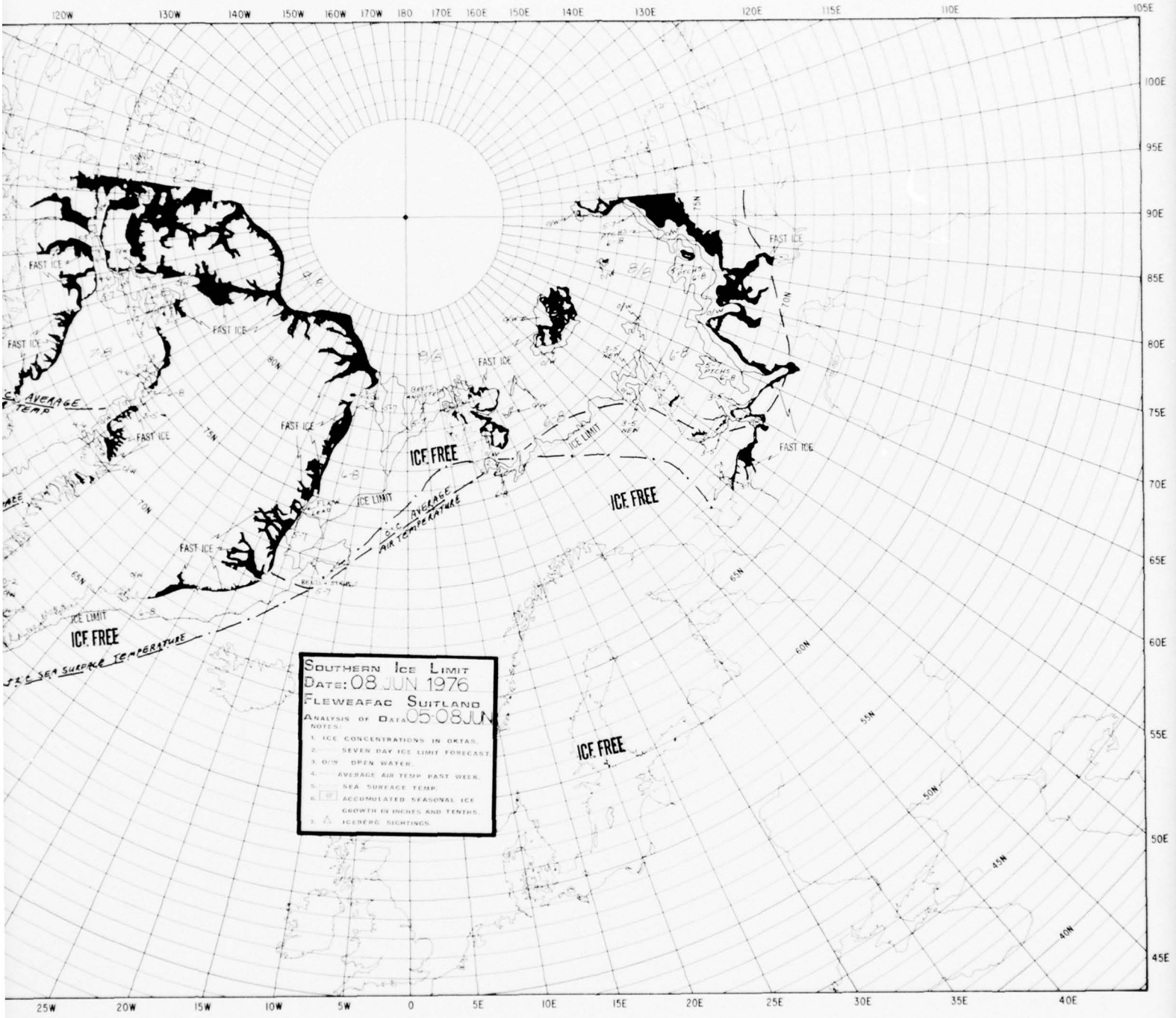


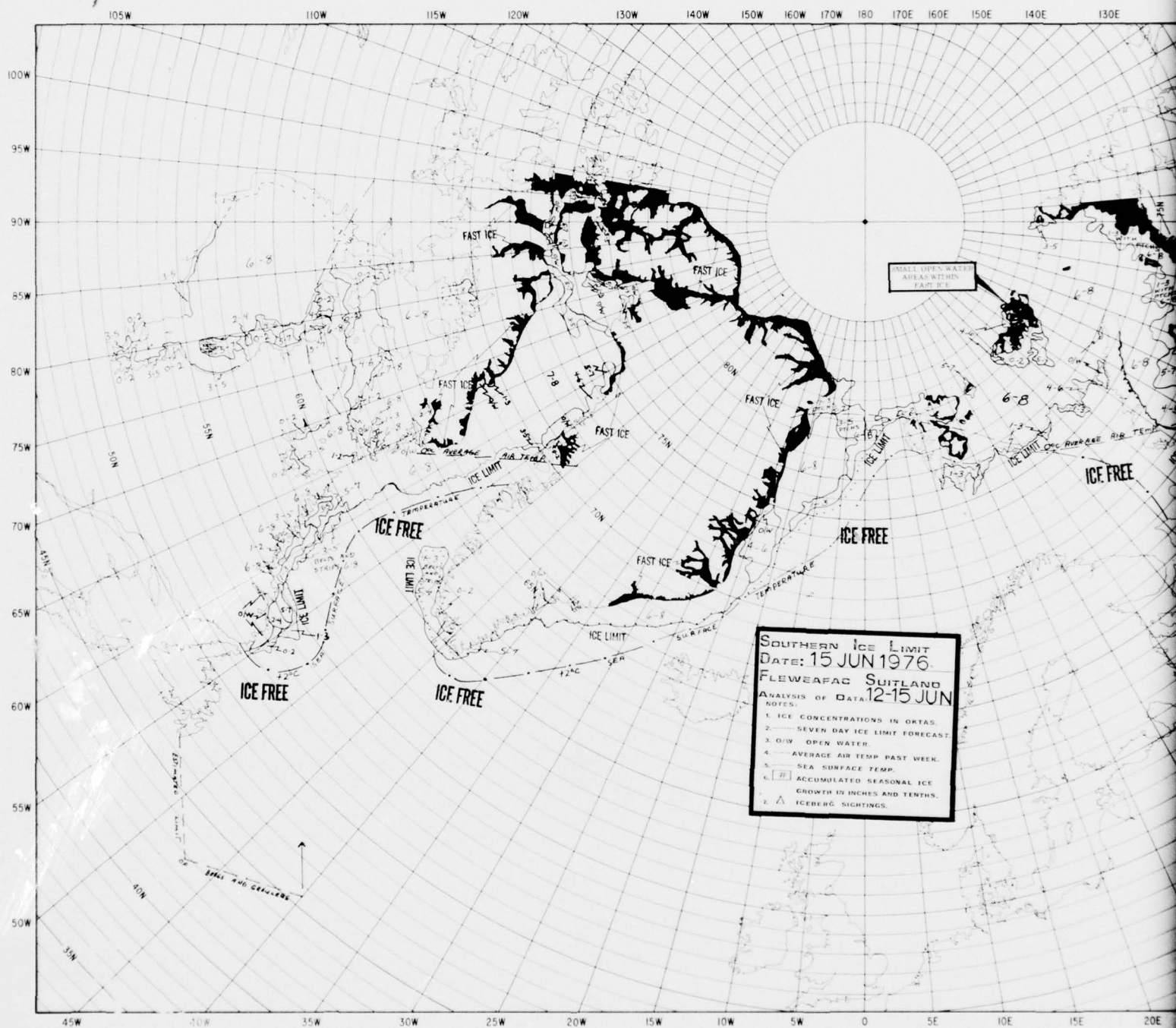
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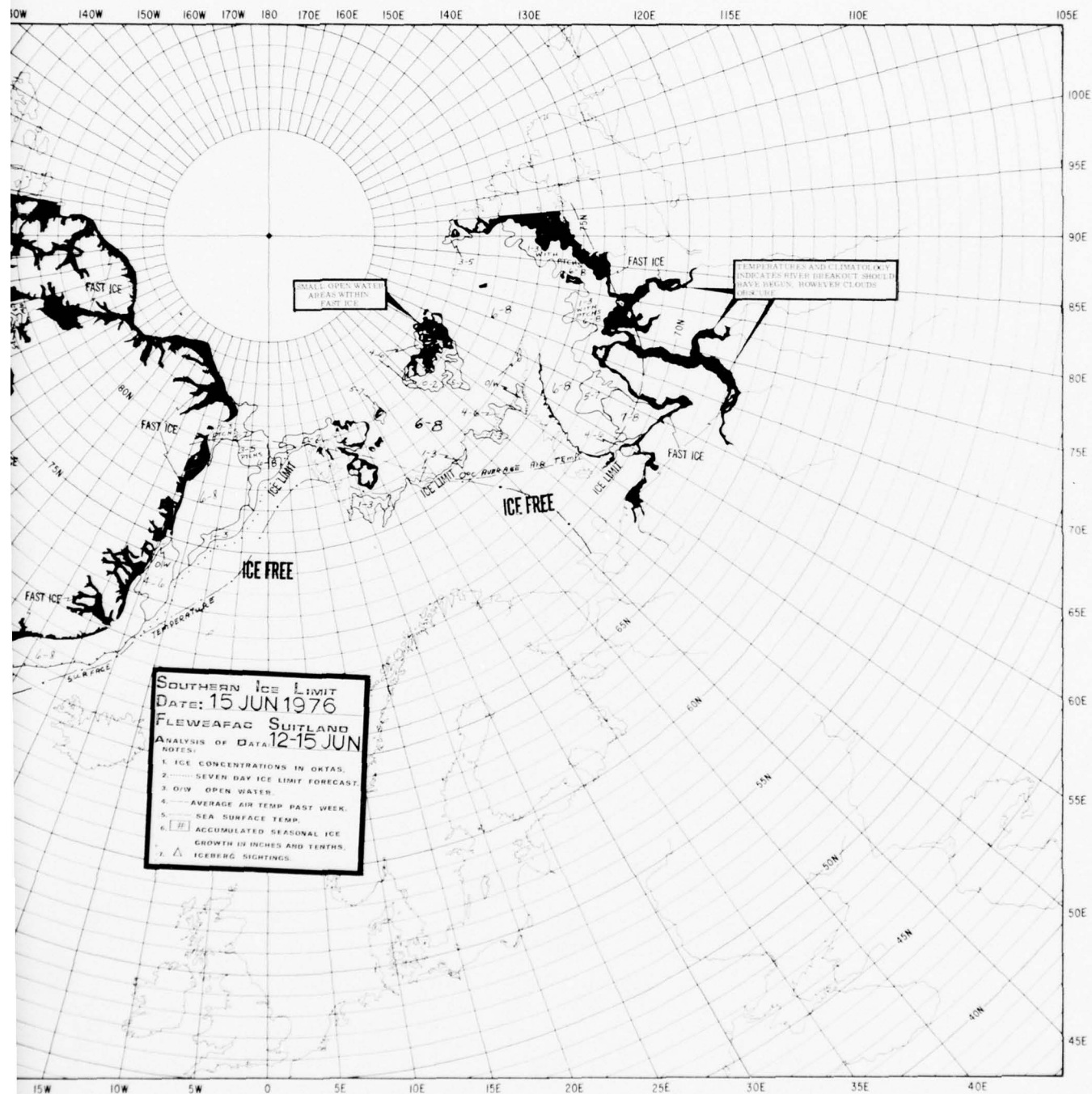


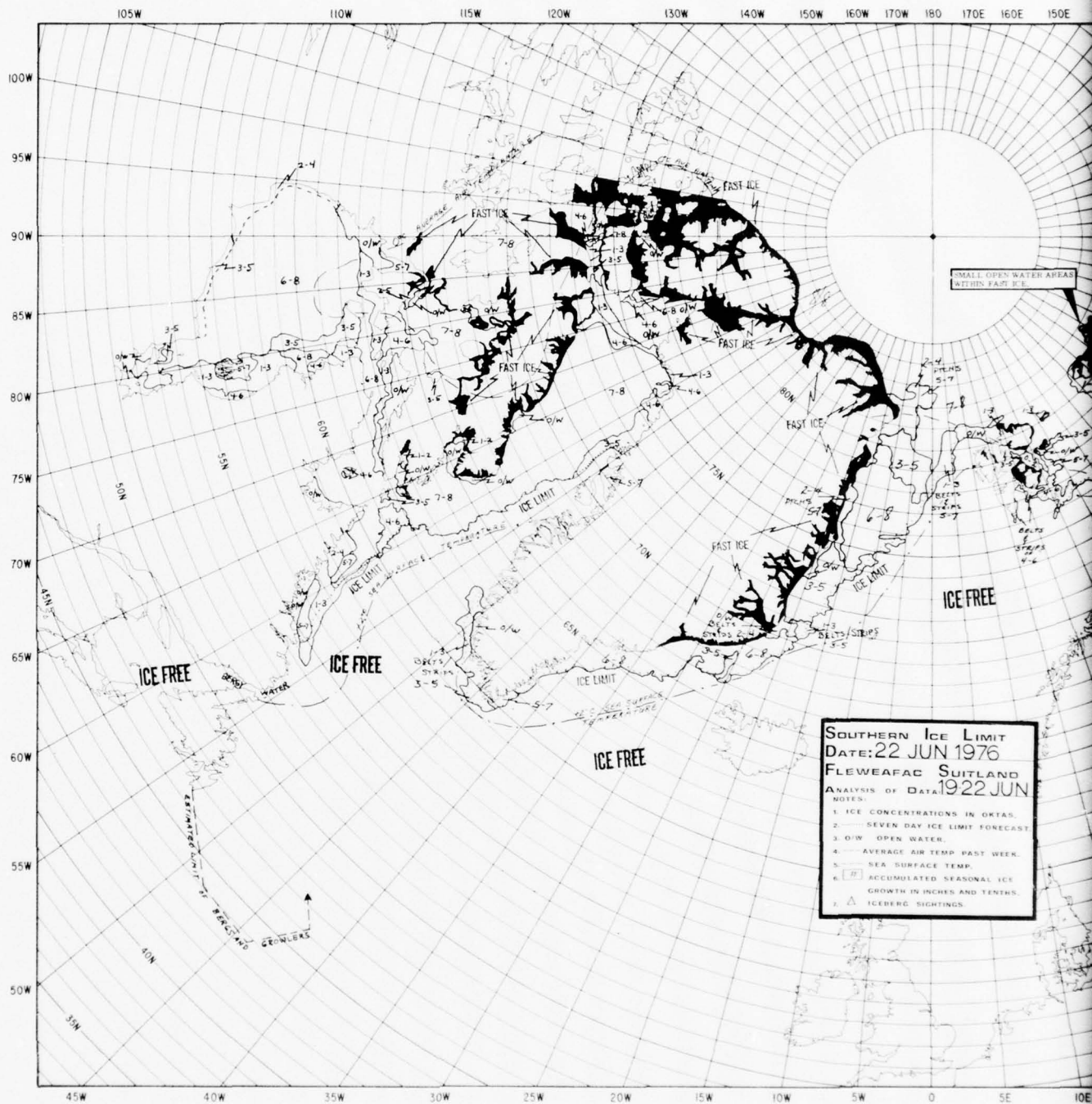


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DATE: 15 JUN 1976
FLEWEAFAC SUITLAND
ANALYSIS OF DATA 12-15 JUN

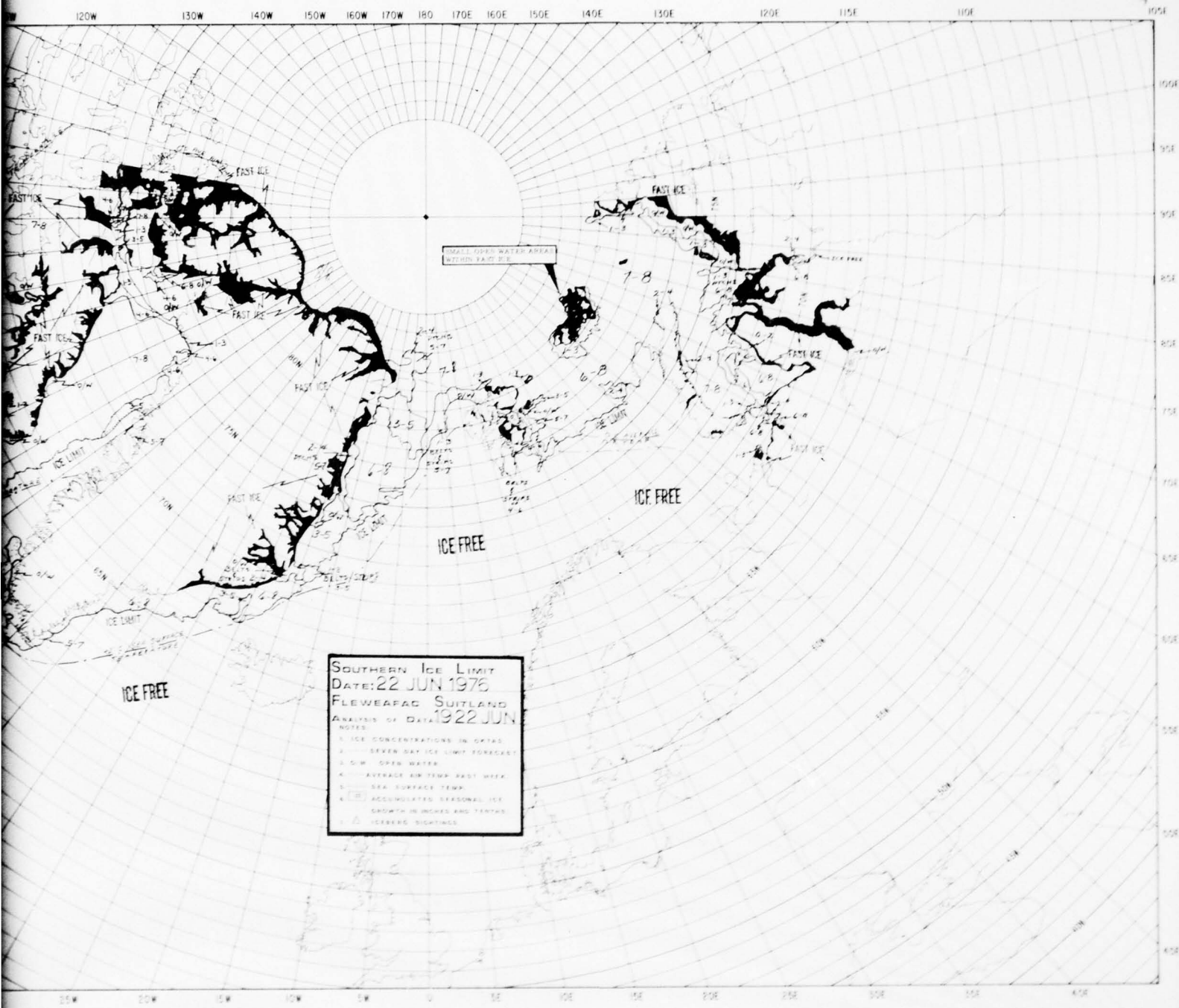
1. ICE CONCENTRATIONS IN ORTAS.
 2. SEVEN DAY ICE LIMIT FORECAST.
 3. O/W OPEN WATER.
 4. AVERAGE AIR TEMP PAST WEEK.
 5. SEA SURFACE TEMP.
 6. [] ACCUMULATED SEASONAL ICE GROWTH IN INCHES AND TENTHS.
 7. A ICEBERG SIGHTINGS.

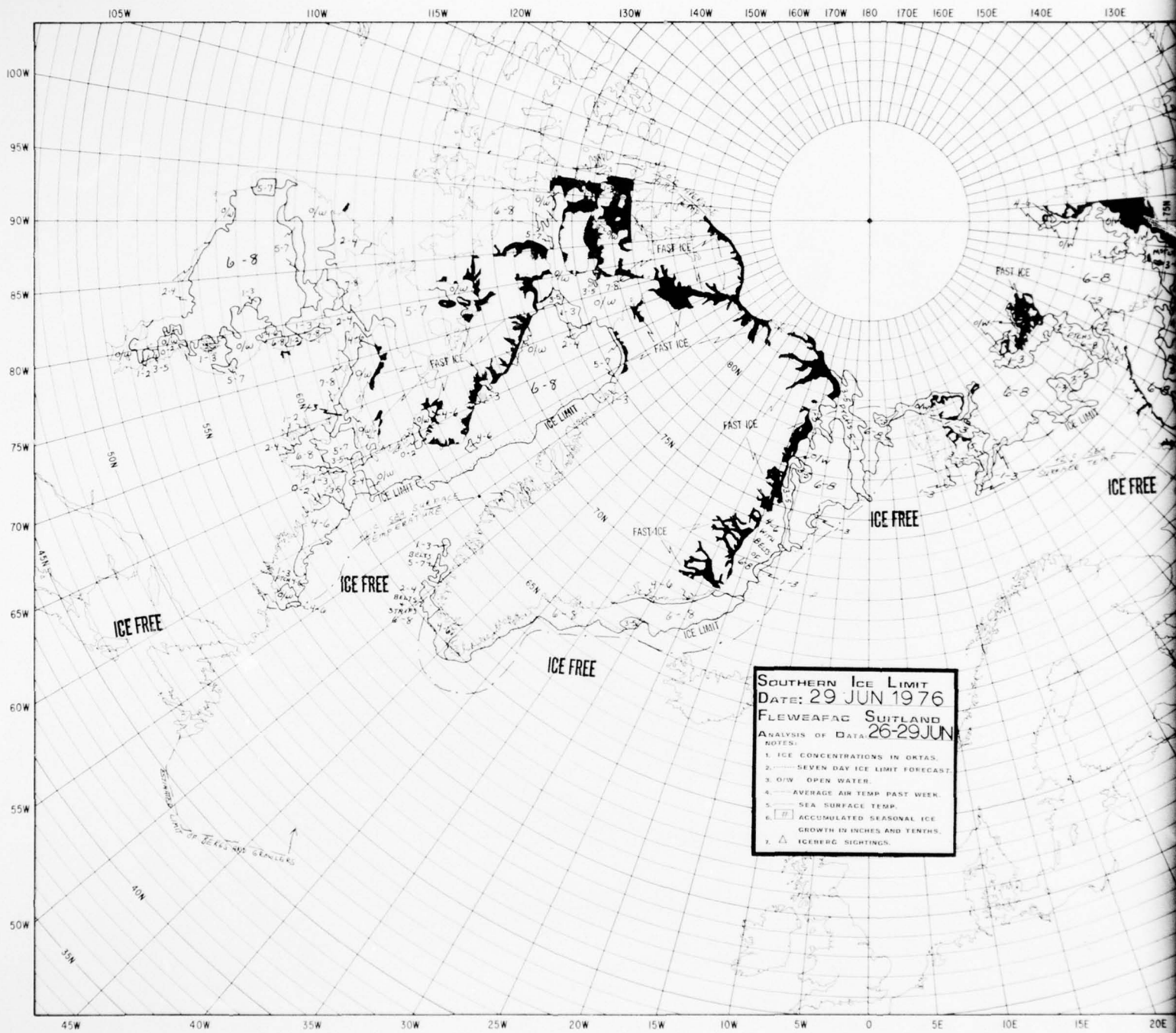
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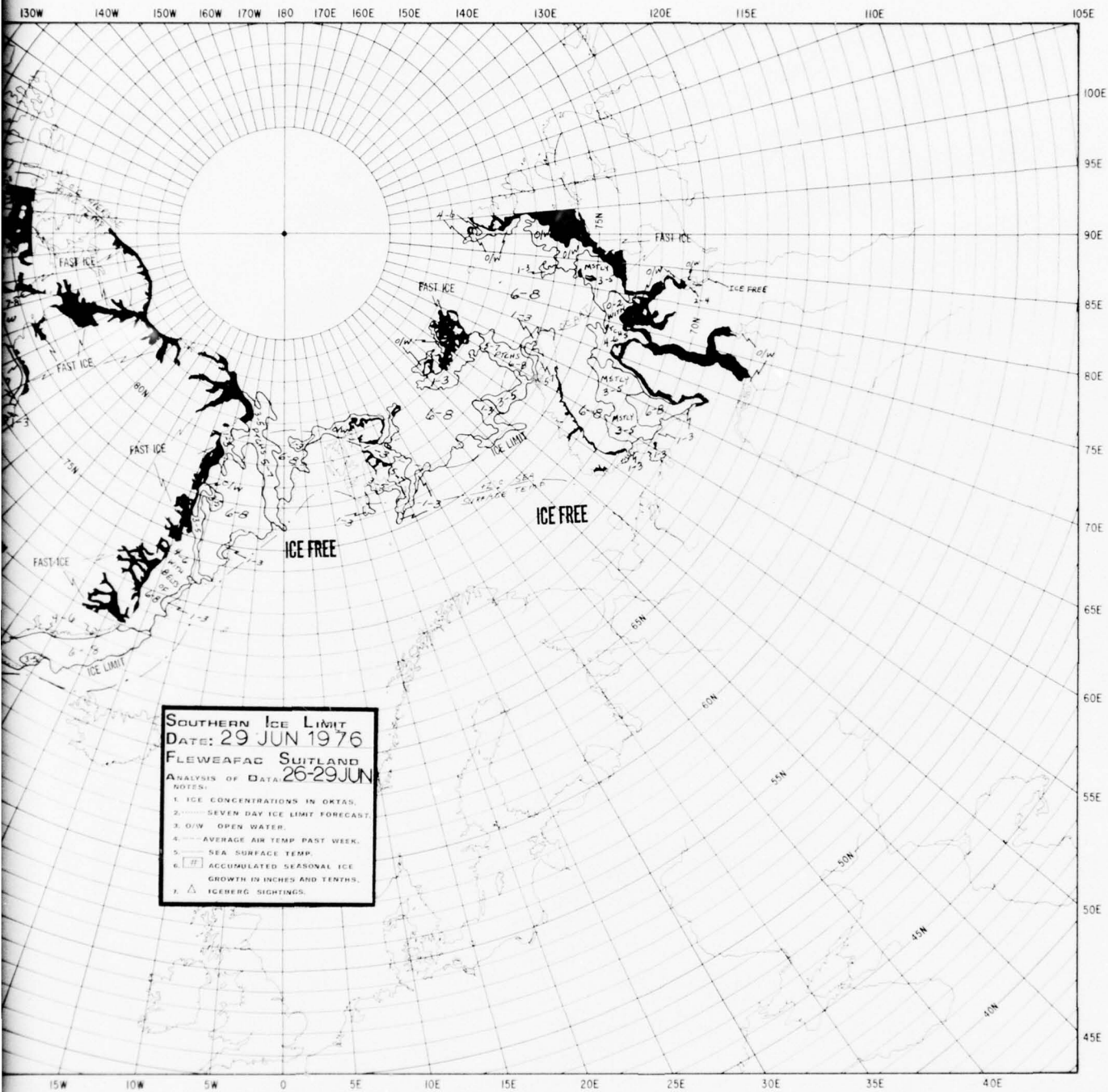


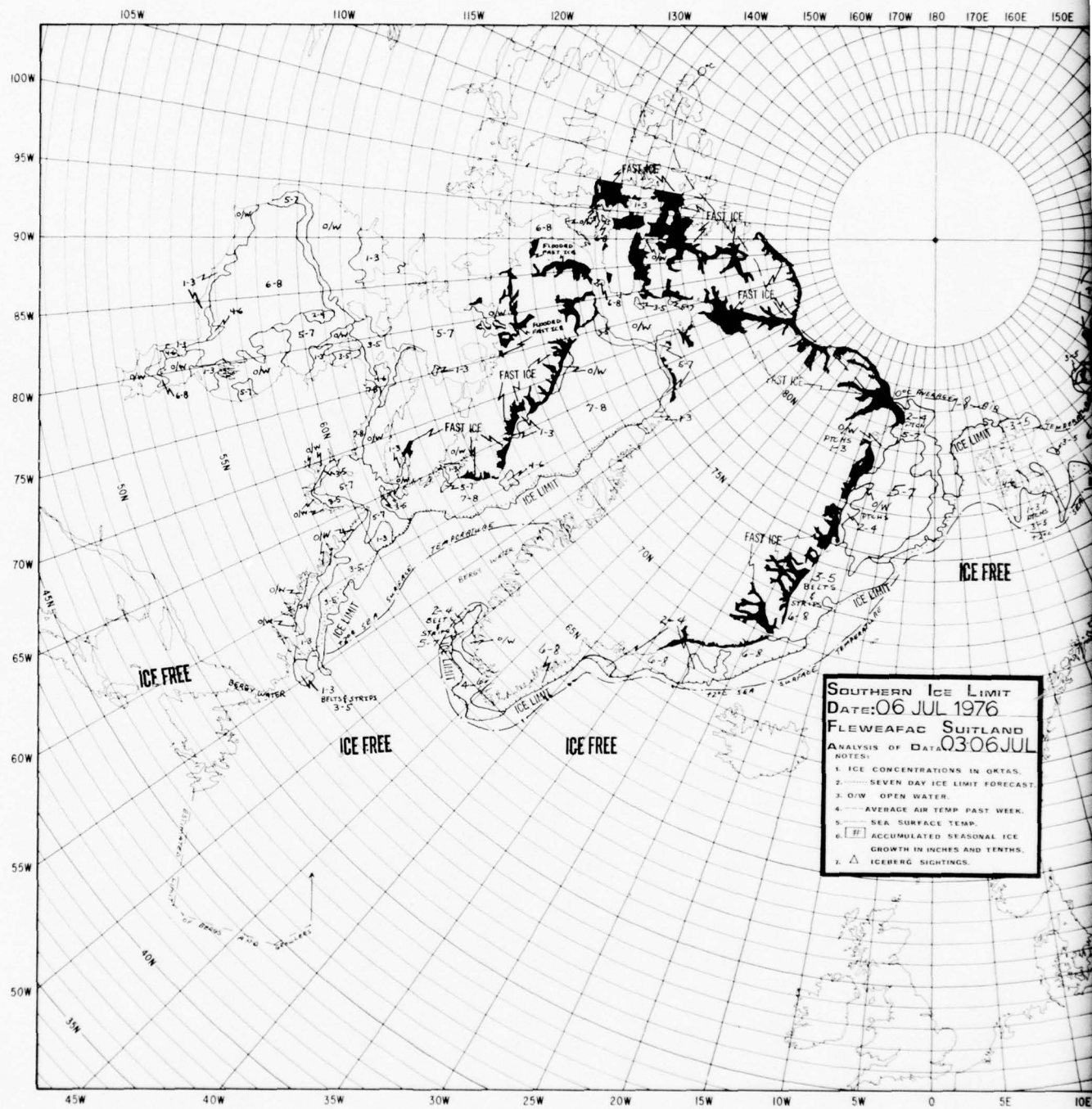


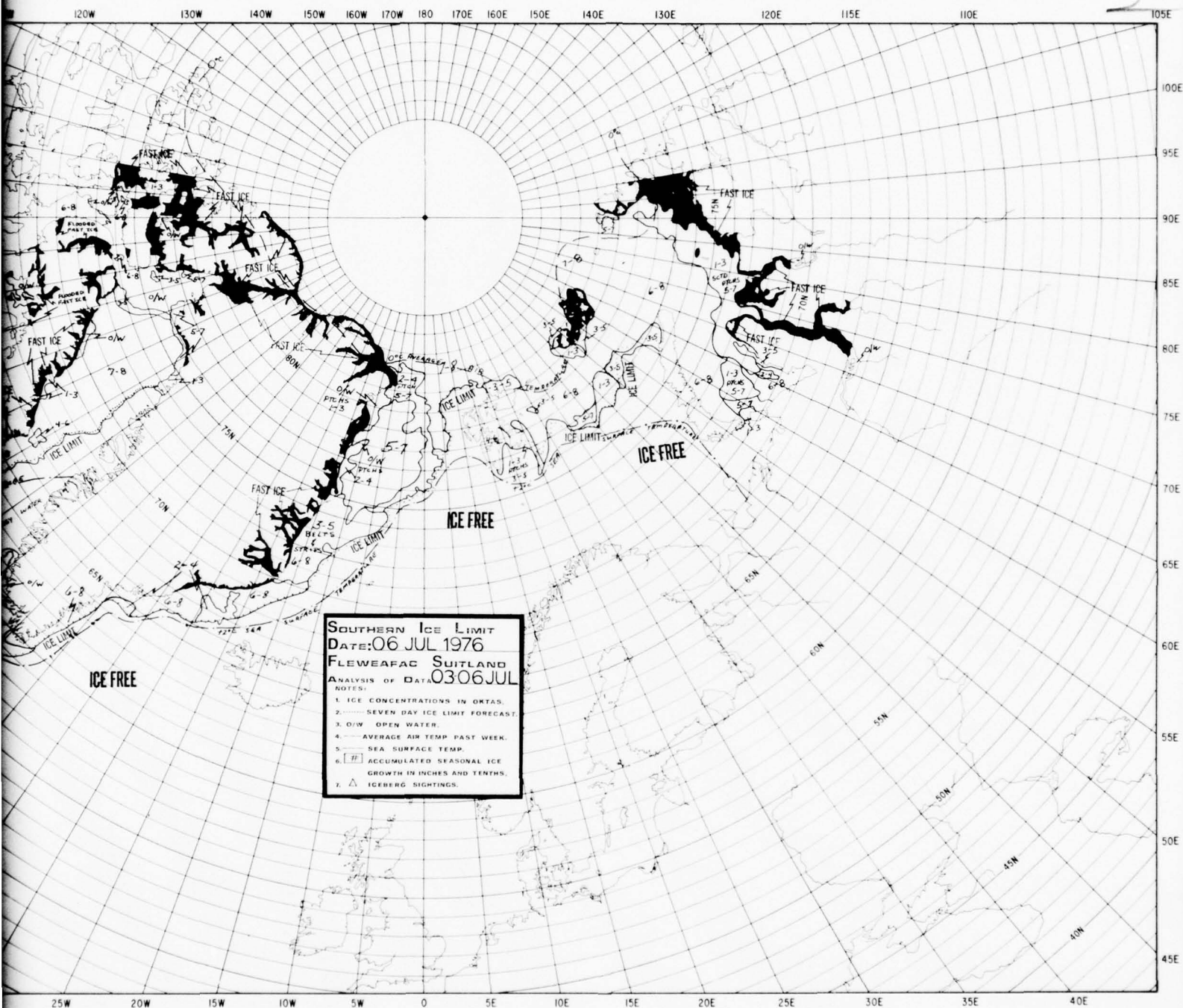
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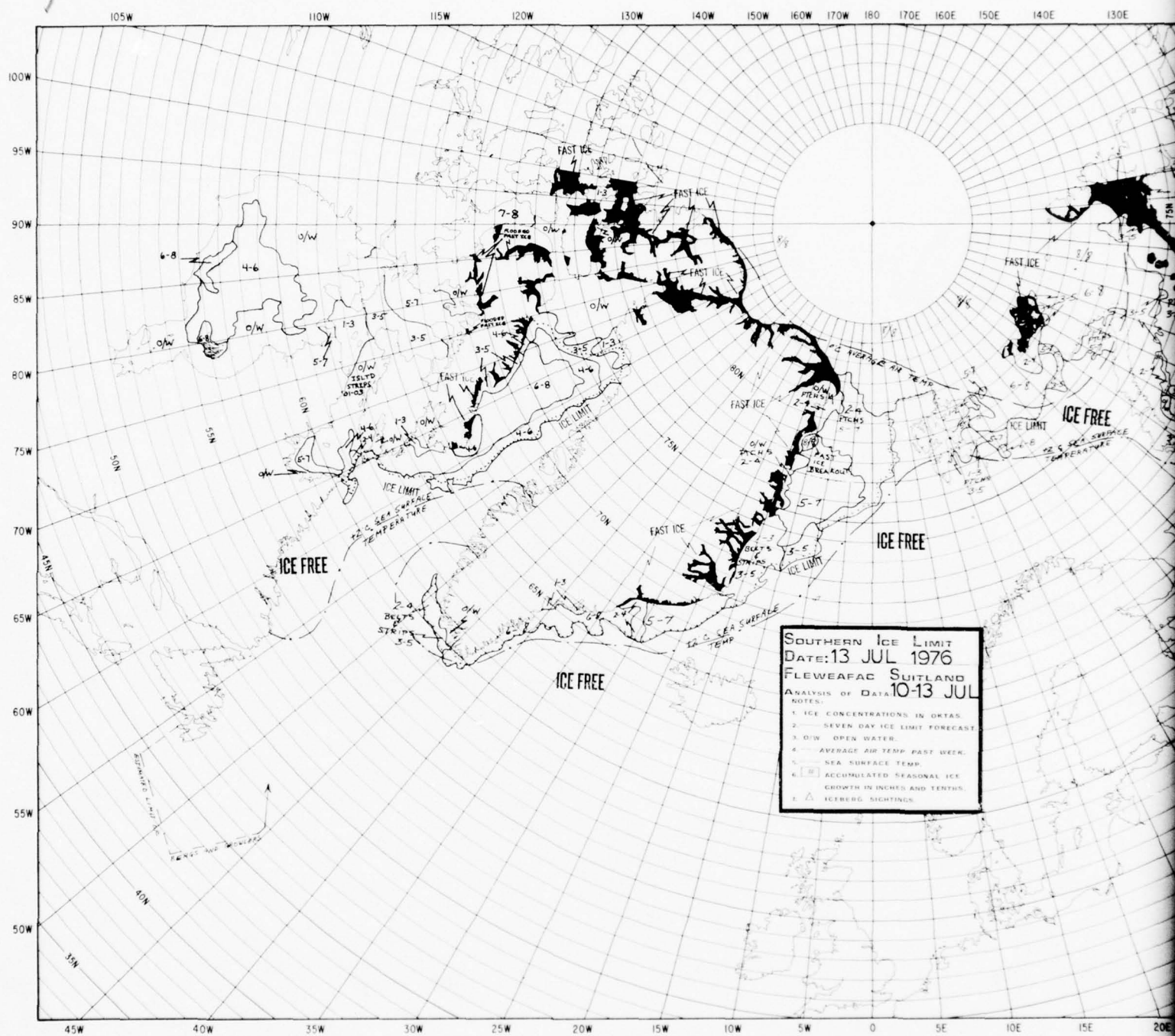


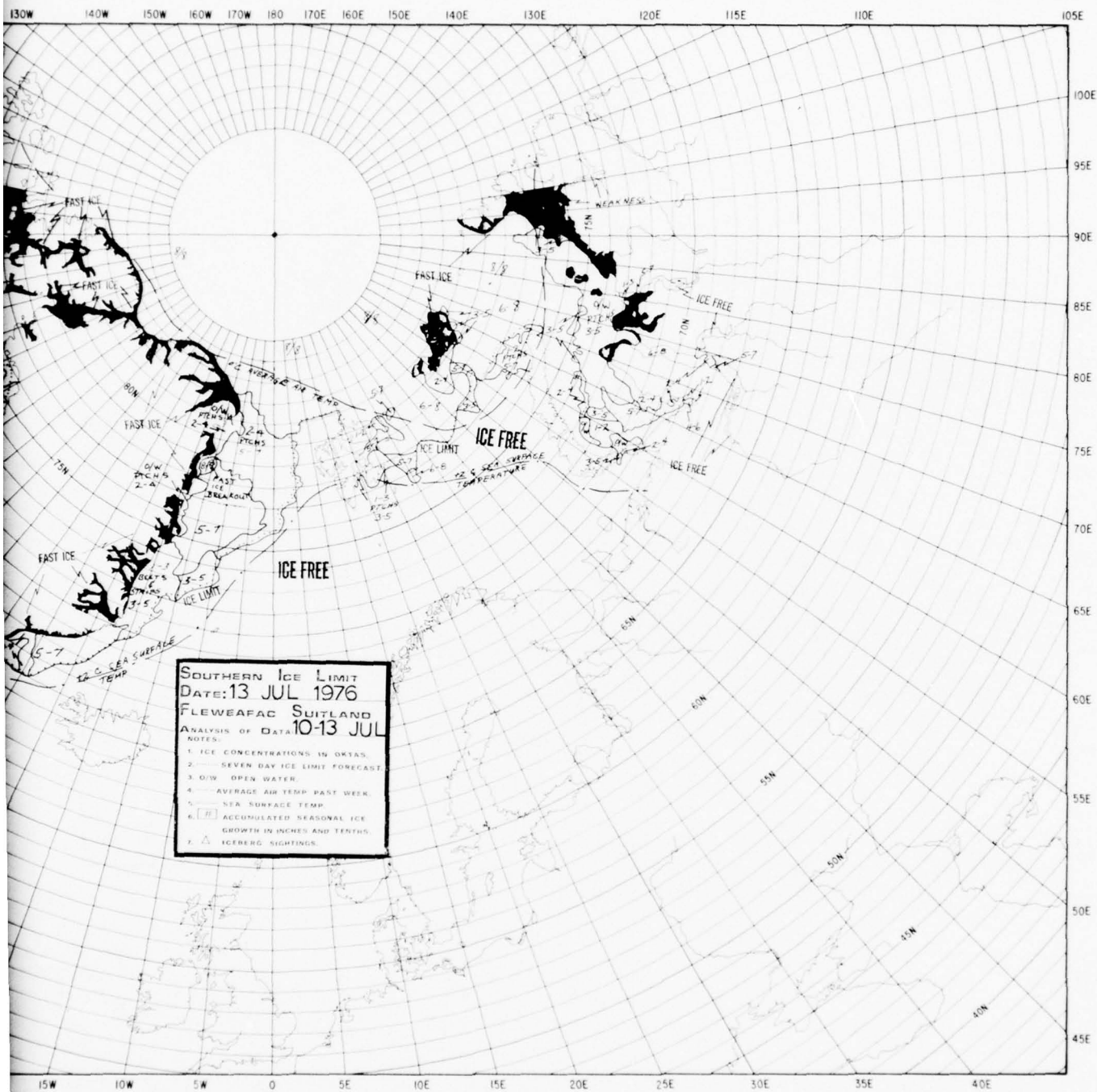


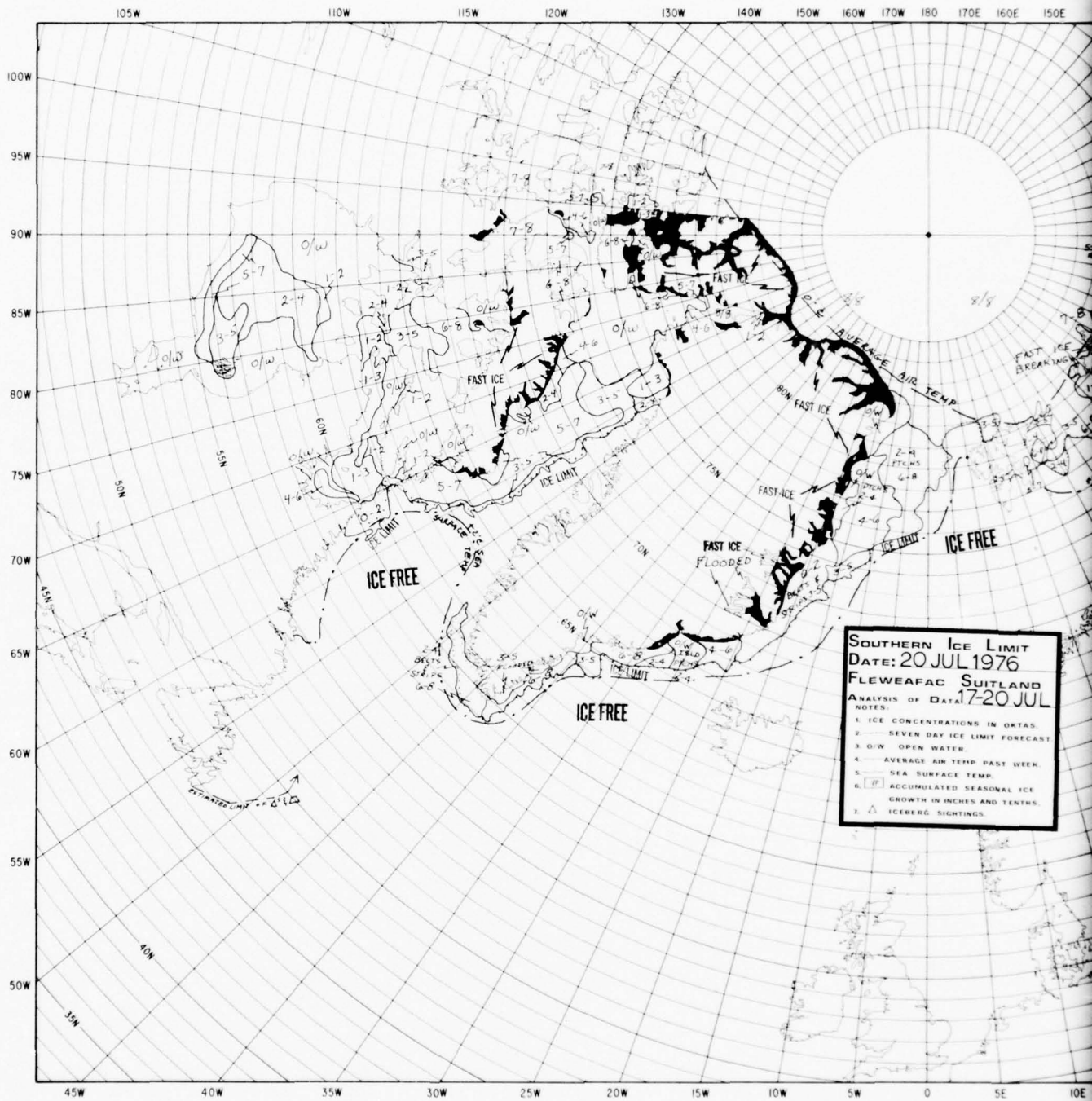


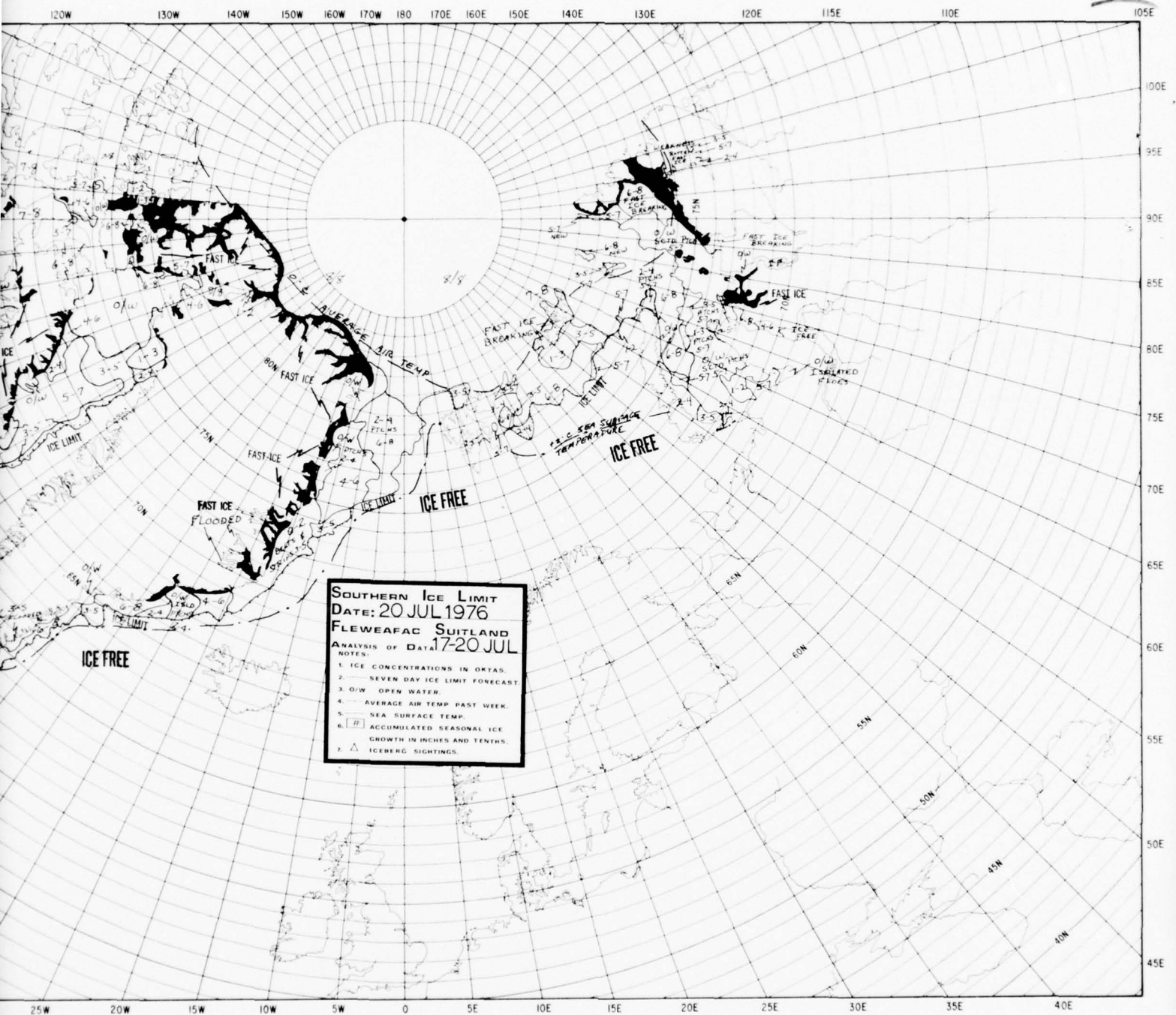




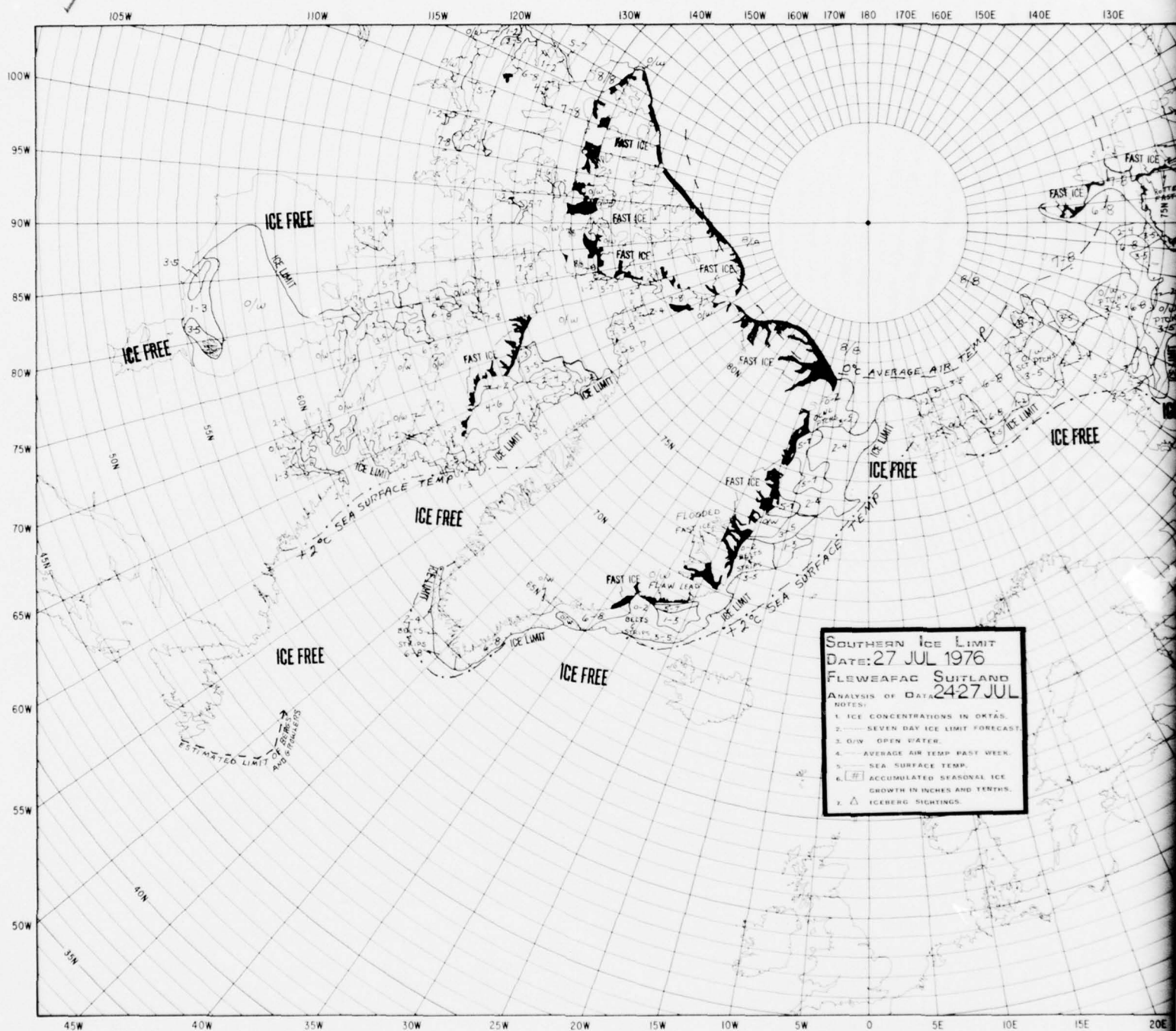


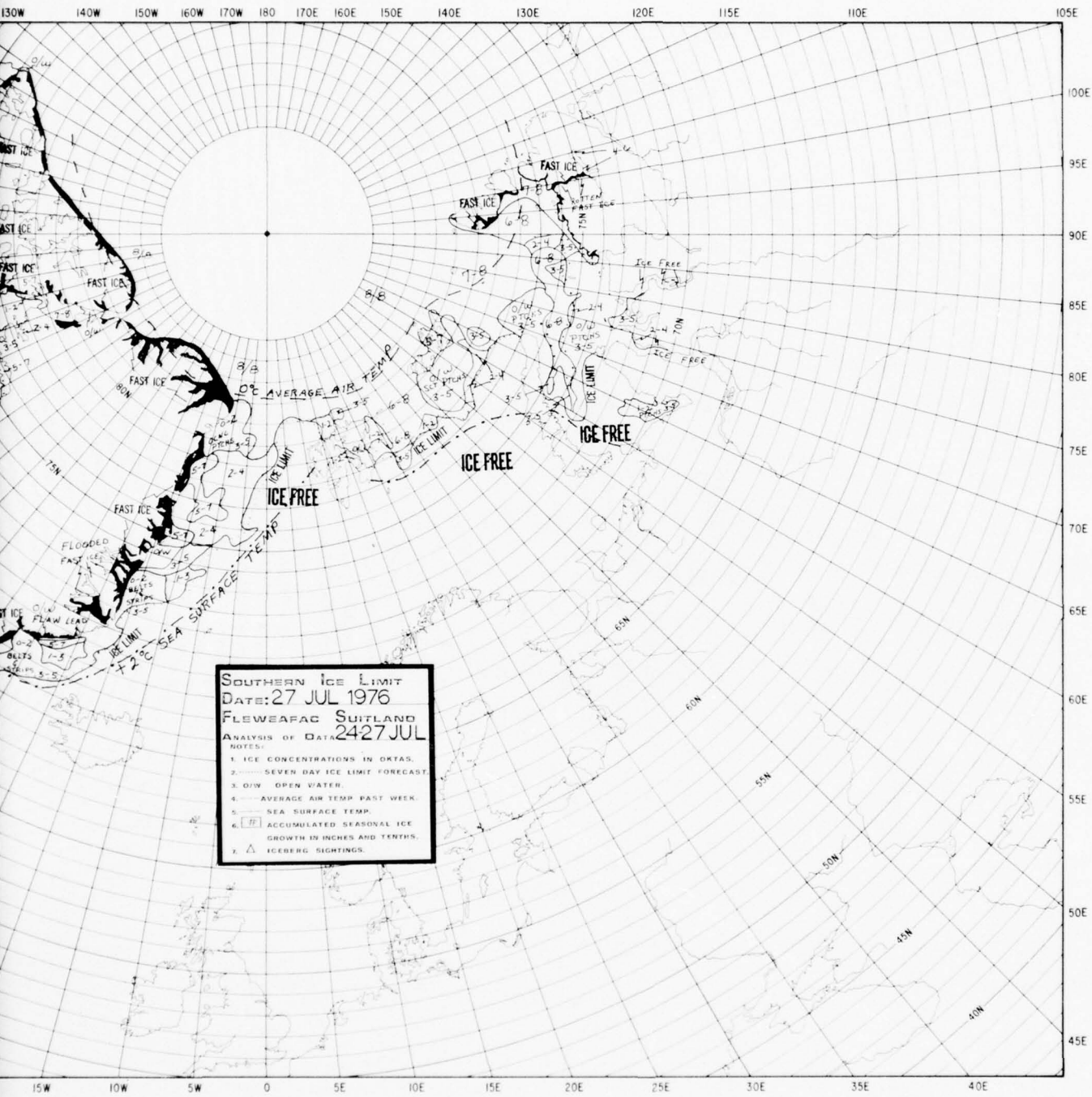


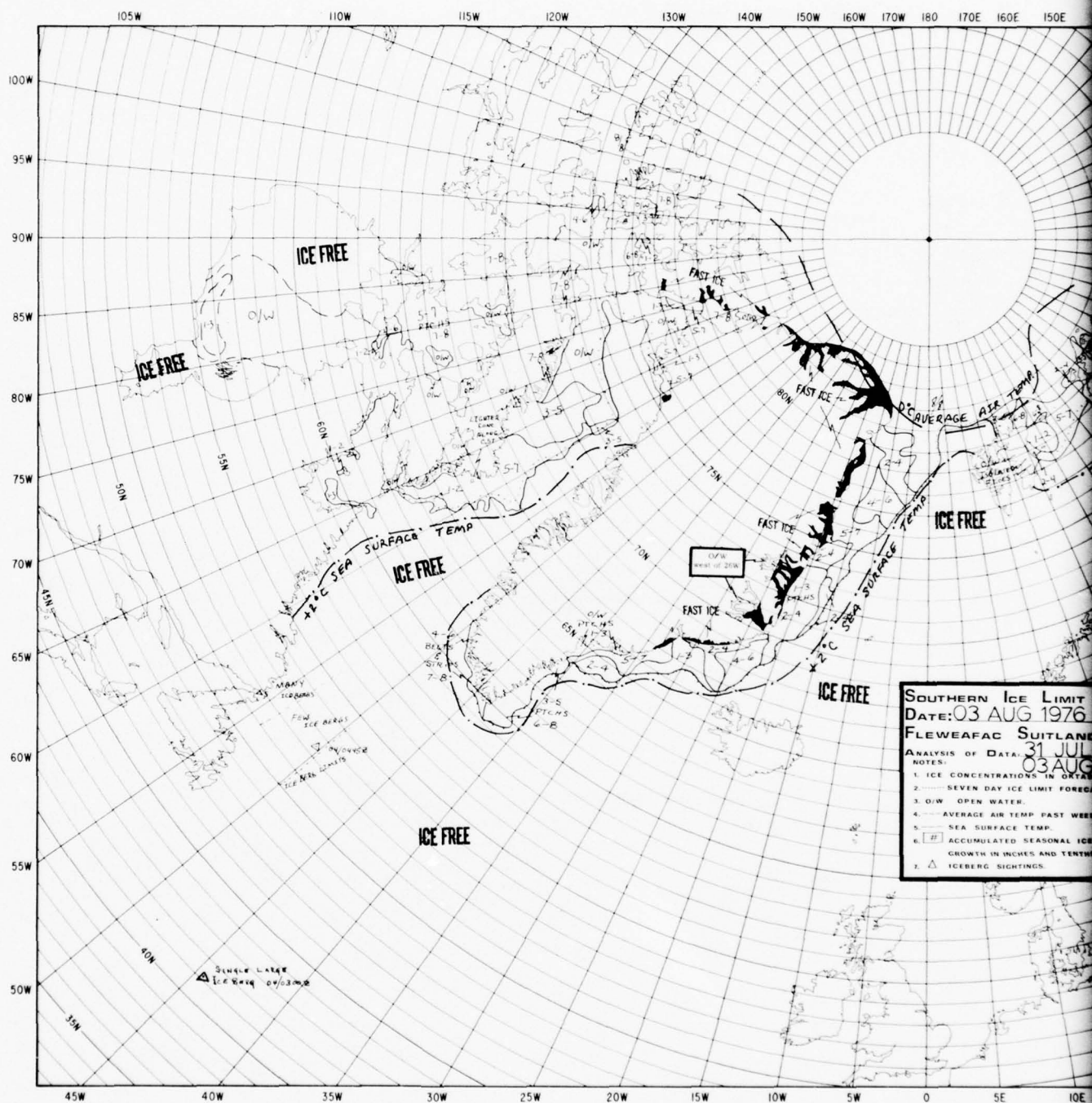


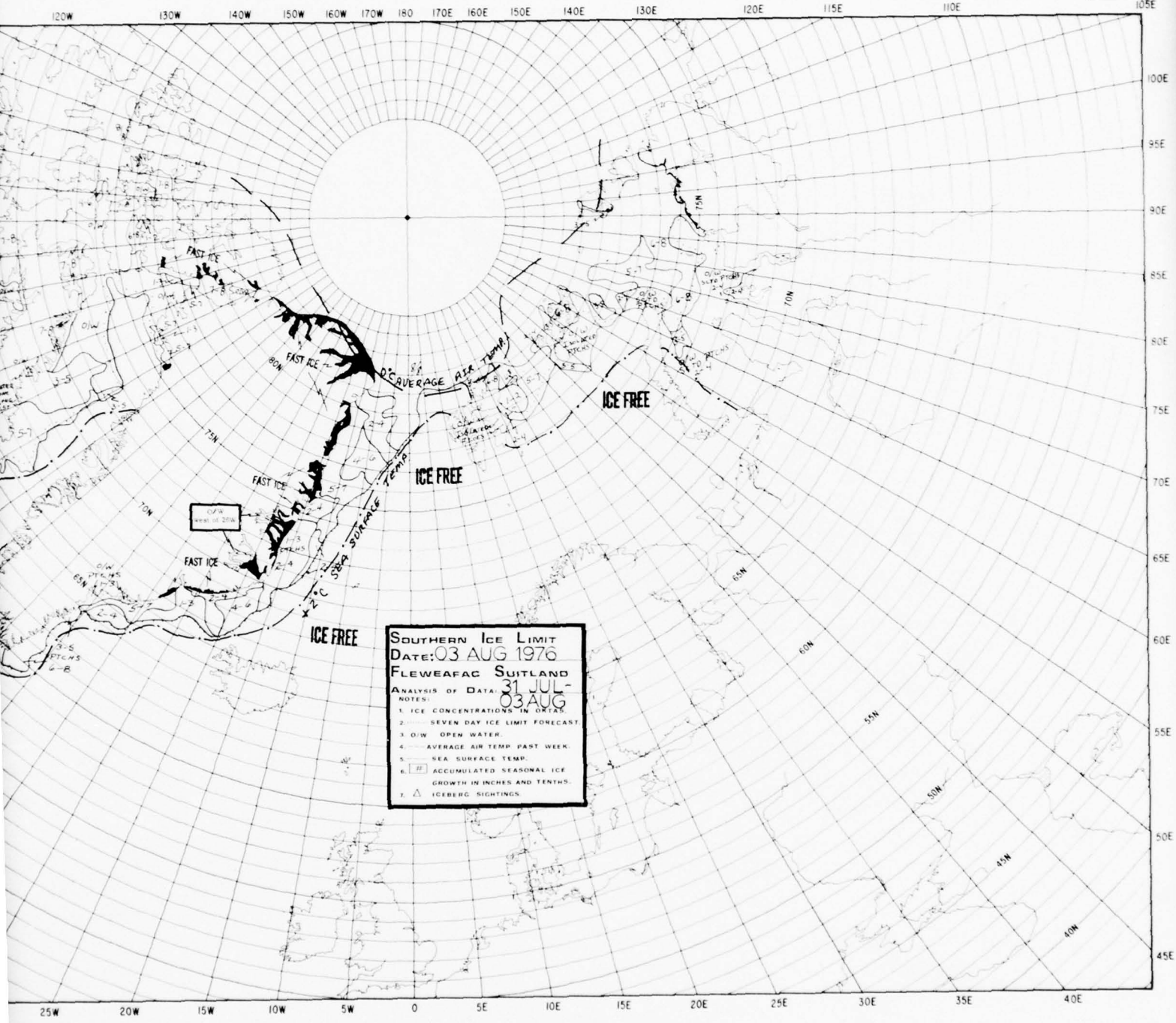


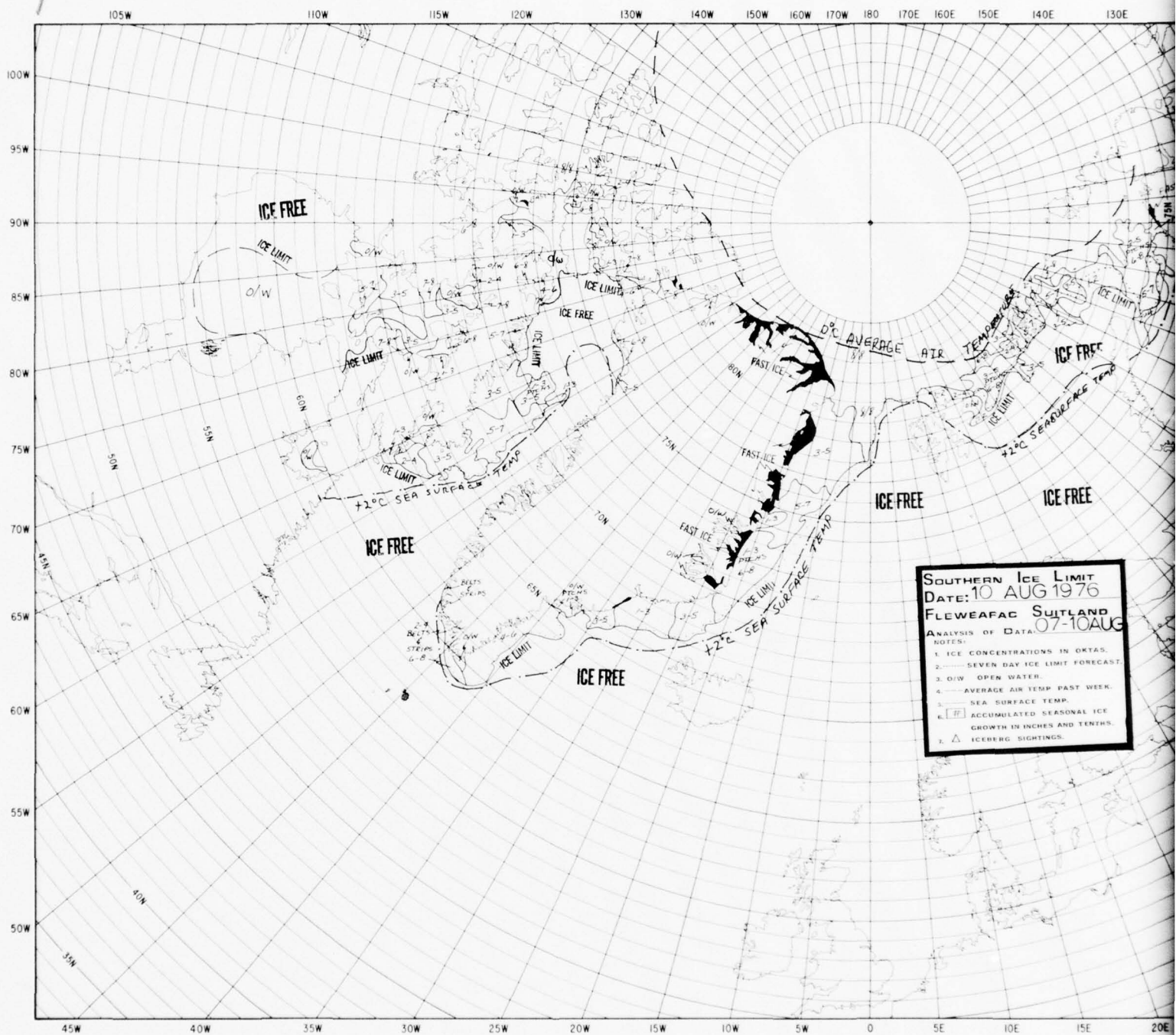
Southern Ice Limit
DATE: 20 JUL 1976
FLEWAFAC SUITLAND
17-20 JUL
ANALYSIS OF DATA
NOTES:
1. ICE CONCENTRATIONS IN ORTAS.
2. SEVEN DAY ICE LIMIT FORECAST.
3. O/W OPEN WATER.
4. AVERAGE AIR TEMP PAST WEEK.
5. SEA SURFACE TEMP.
6. [Shaded Box] ACCUMULATED SEASONAL ICE GROWTH IN INCHES AND TENTHS.
7. [Triangle] ICEBERG SIGHTINGS.

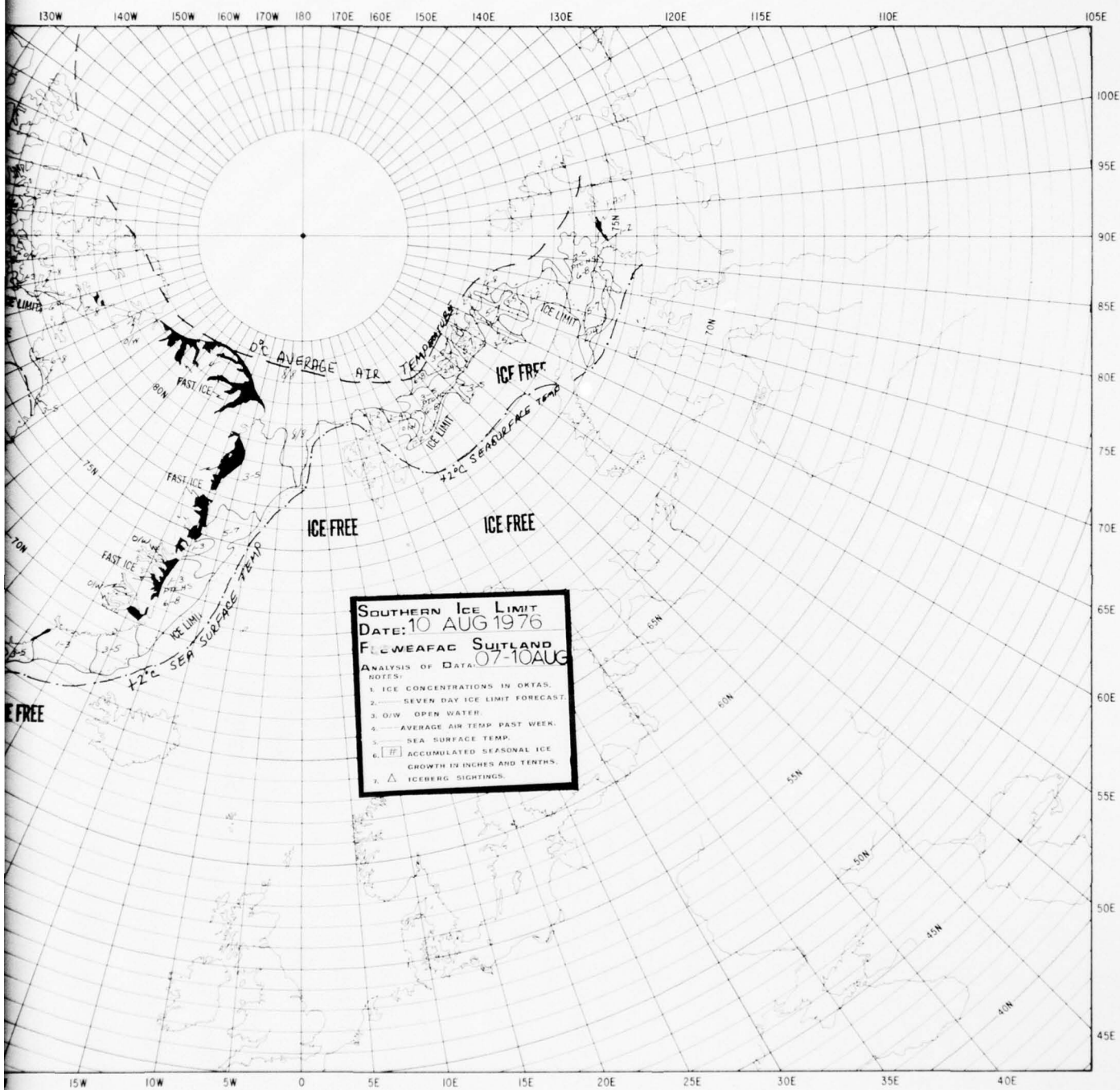


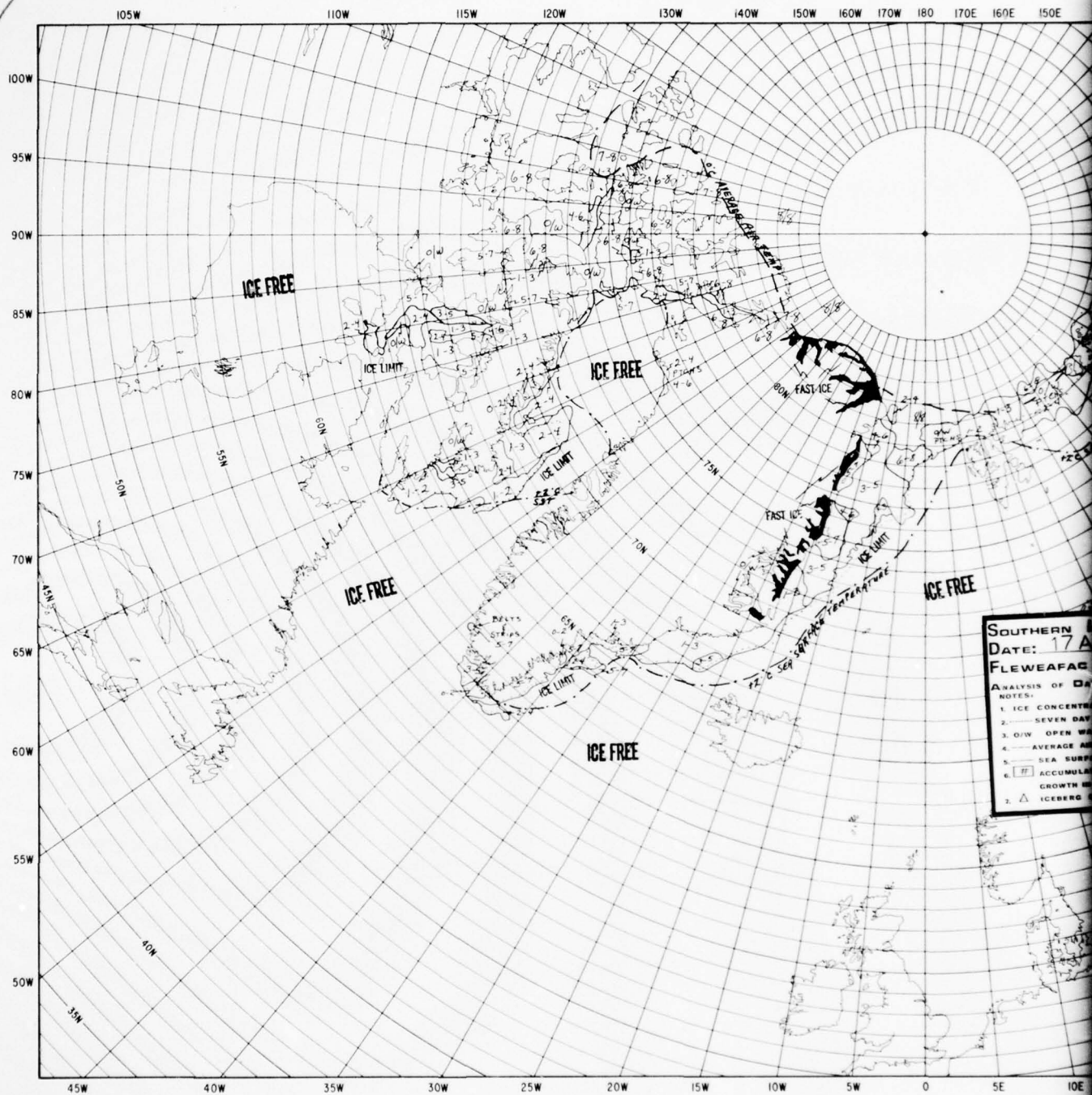


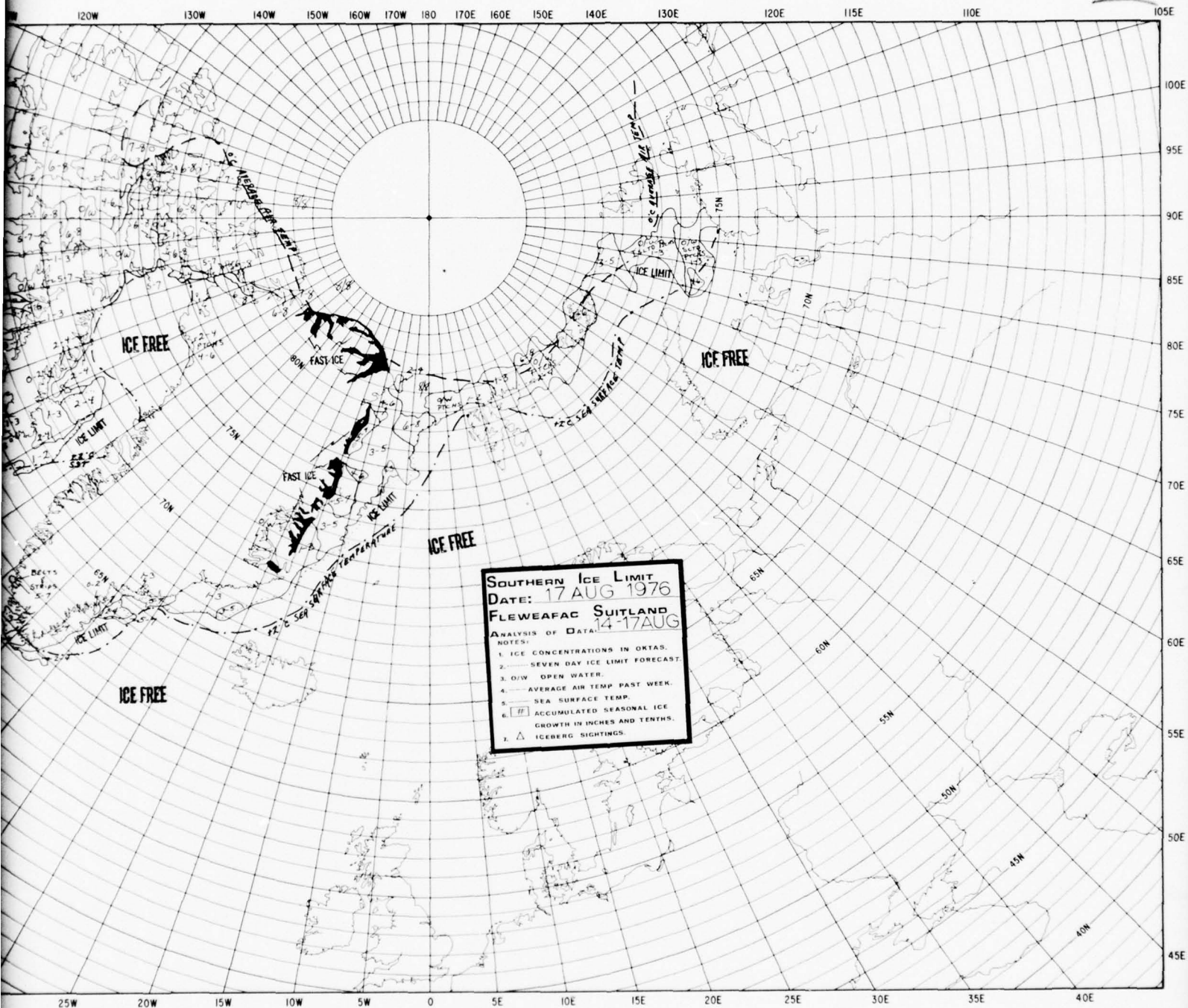


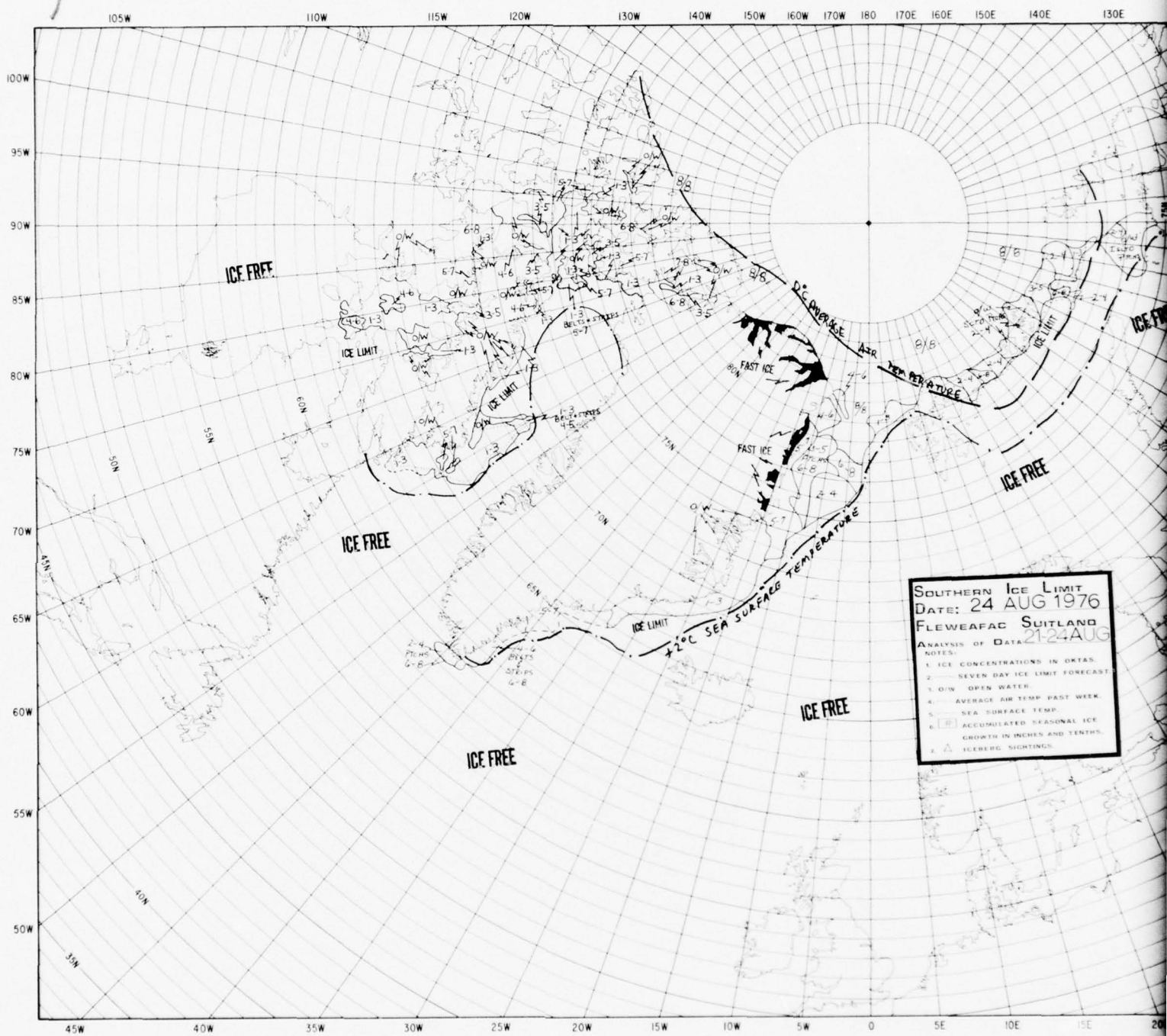


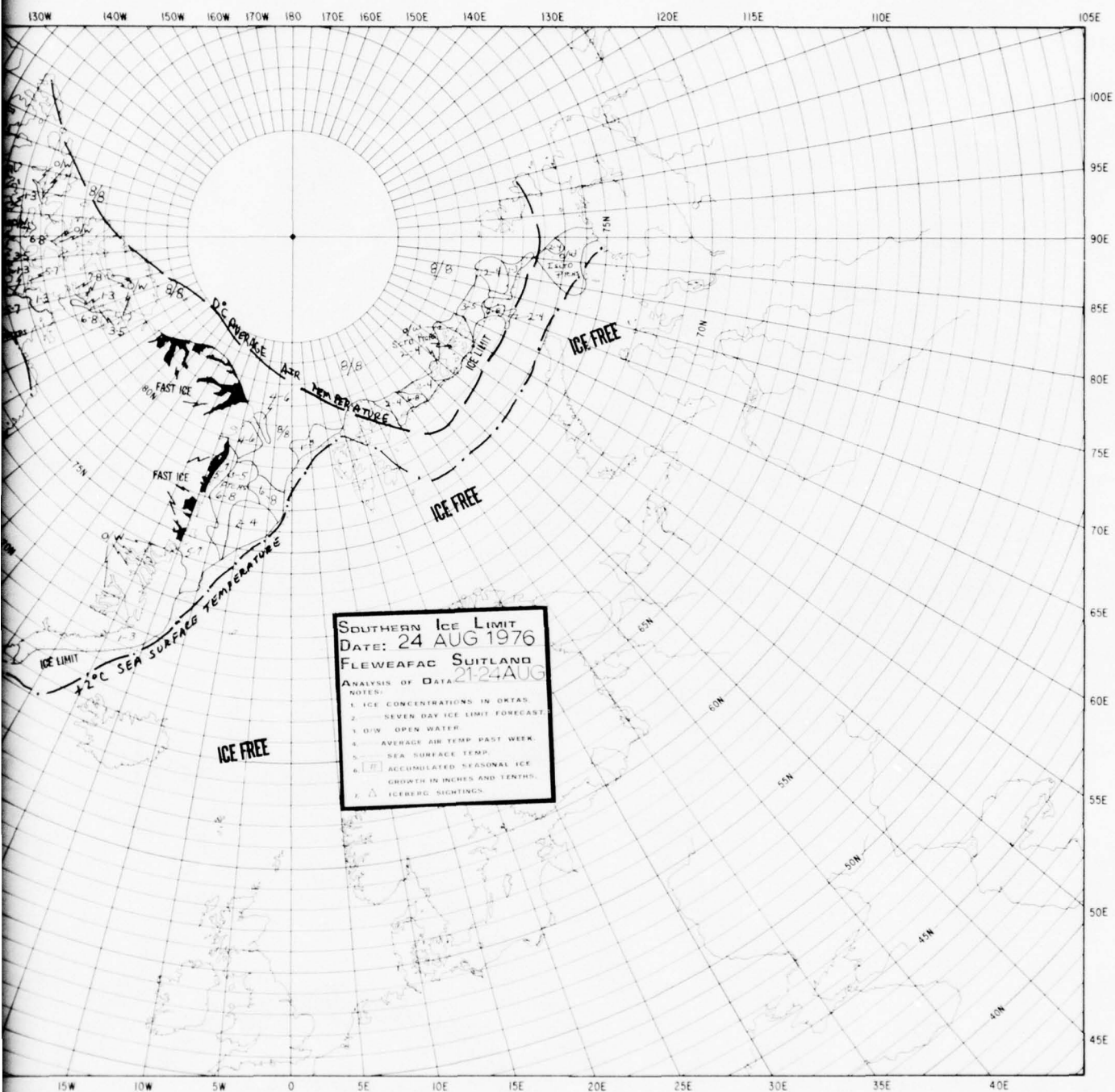


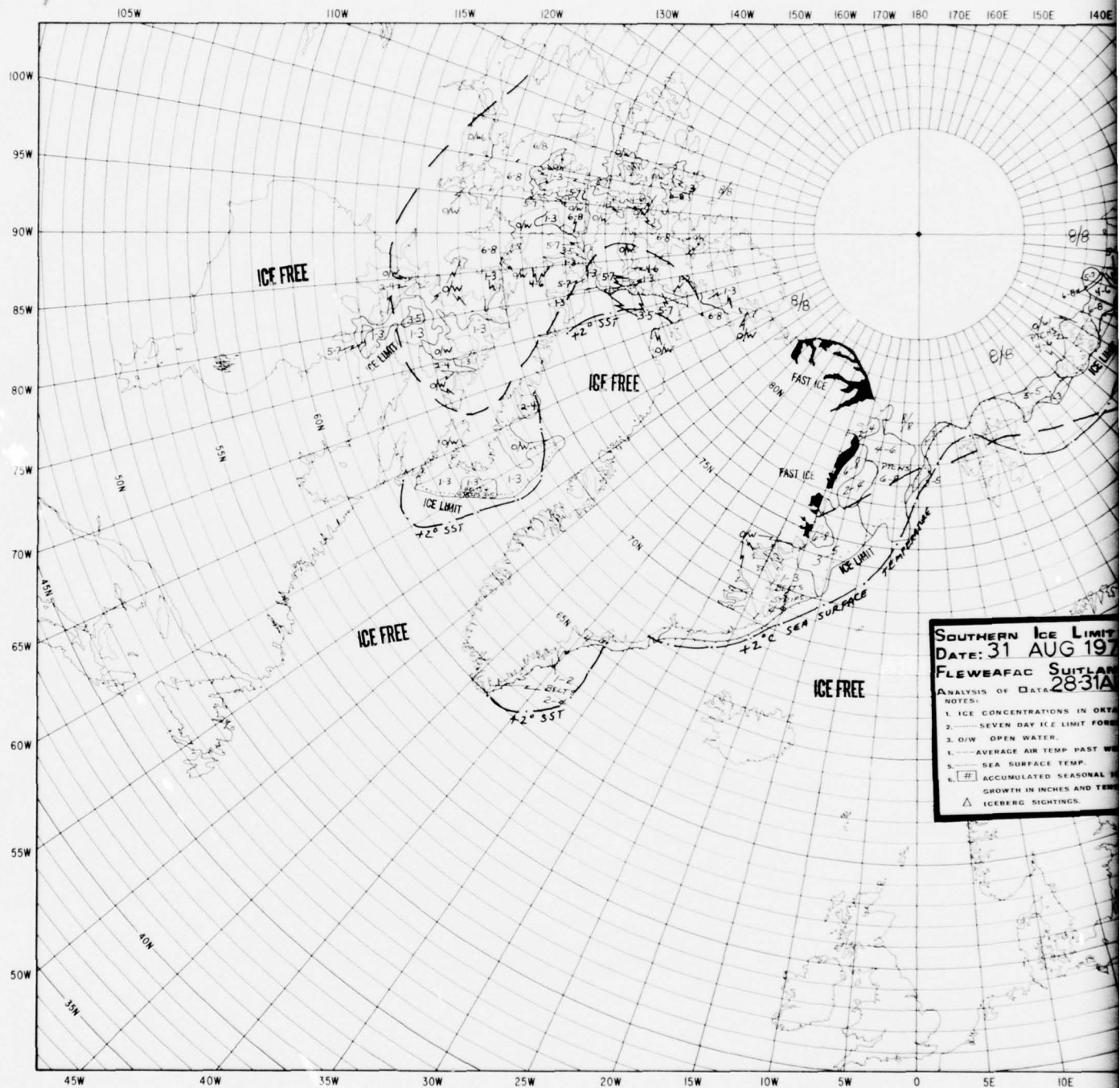


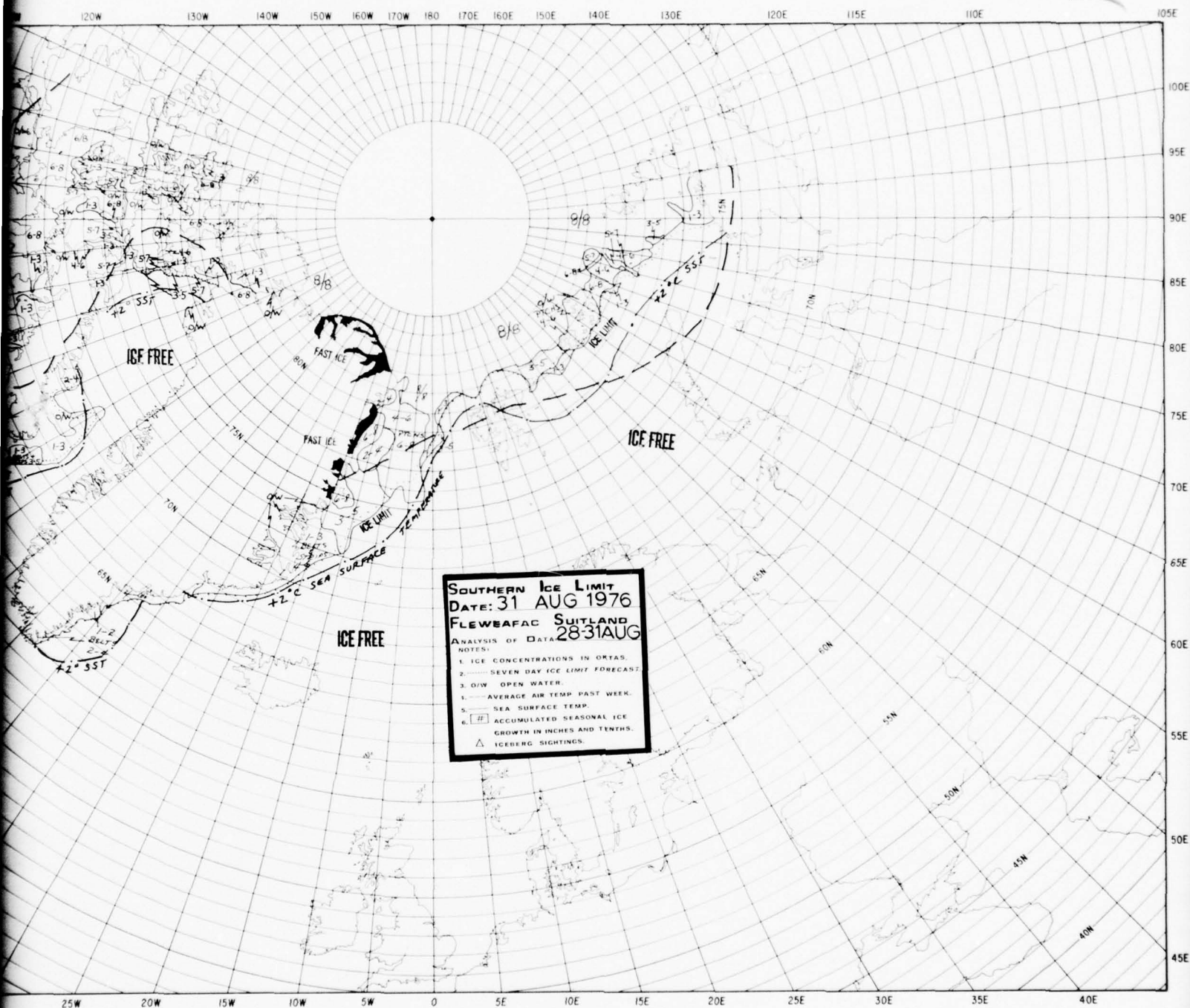


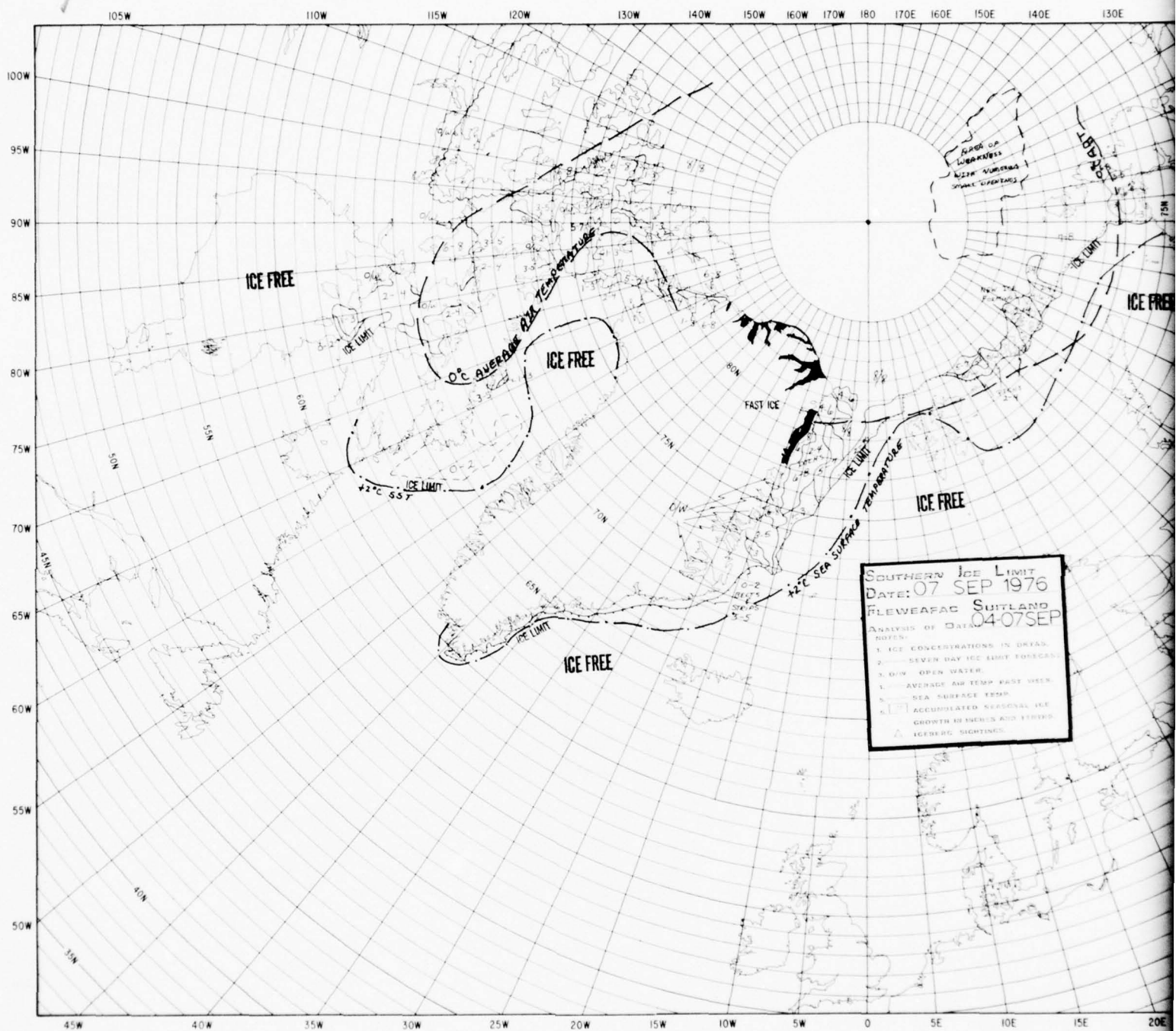


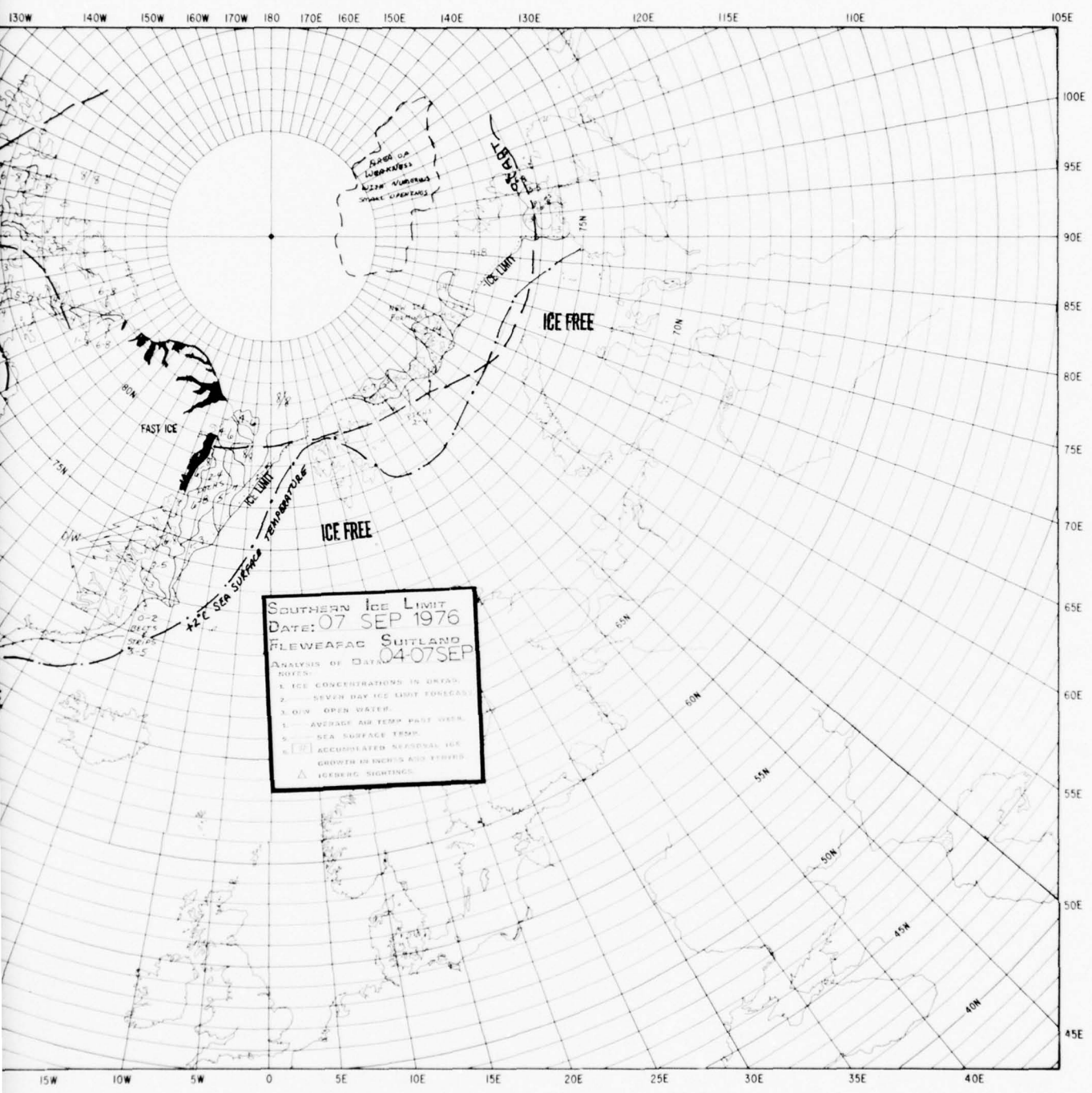


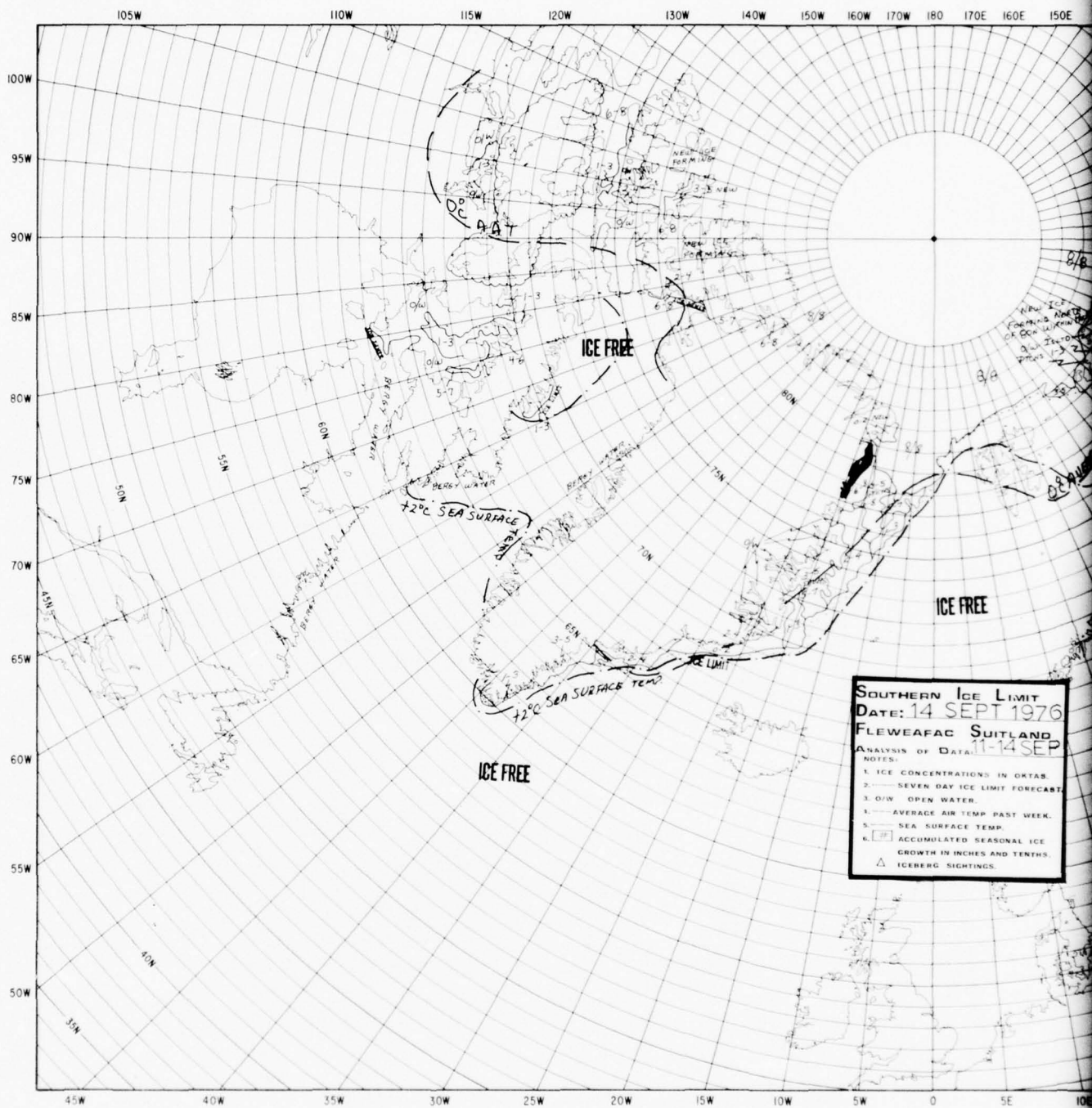


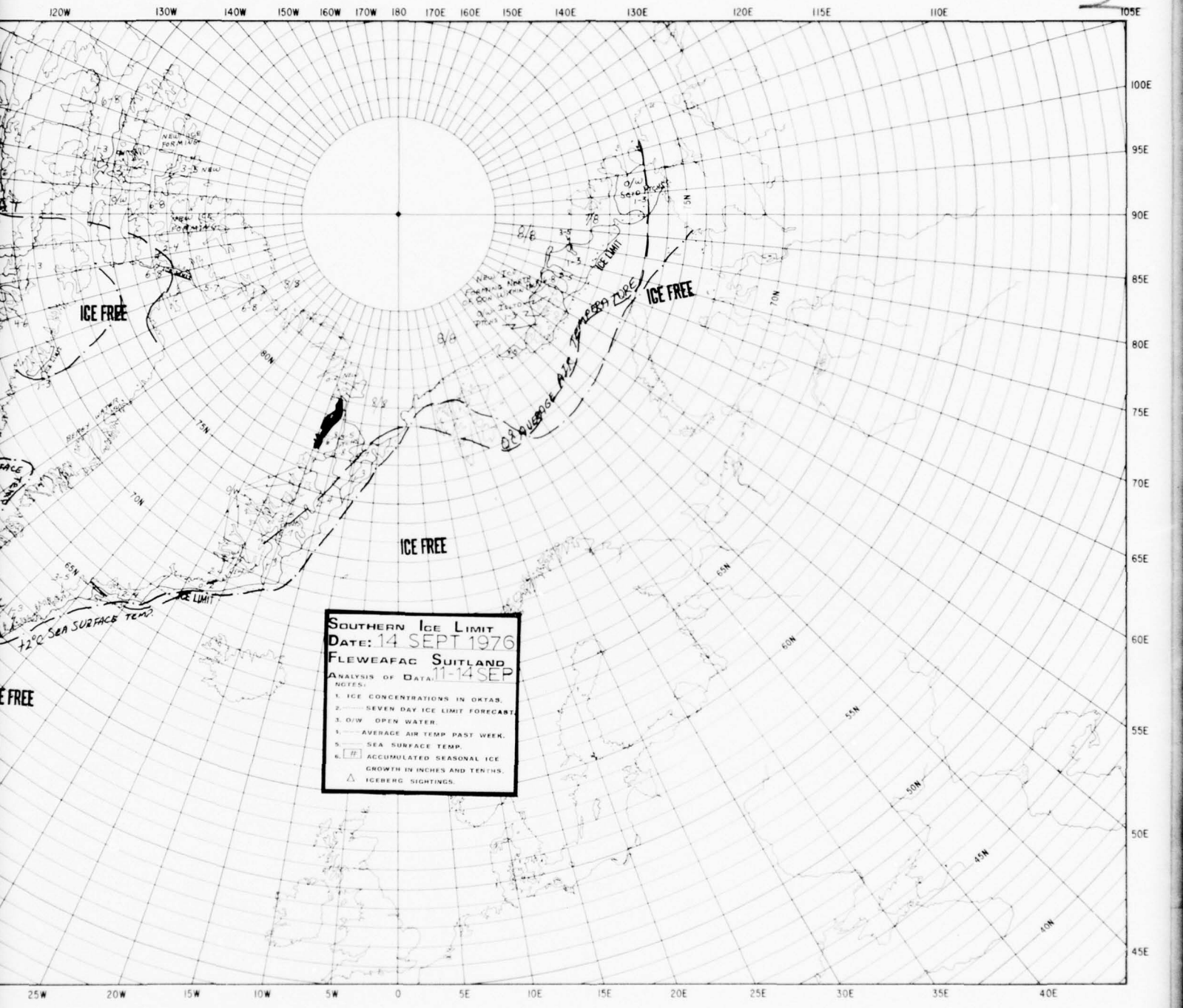


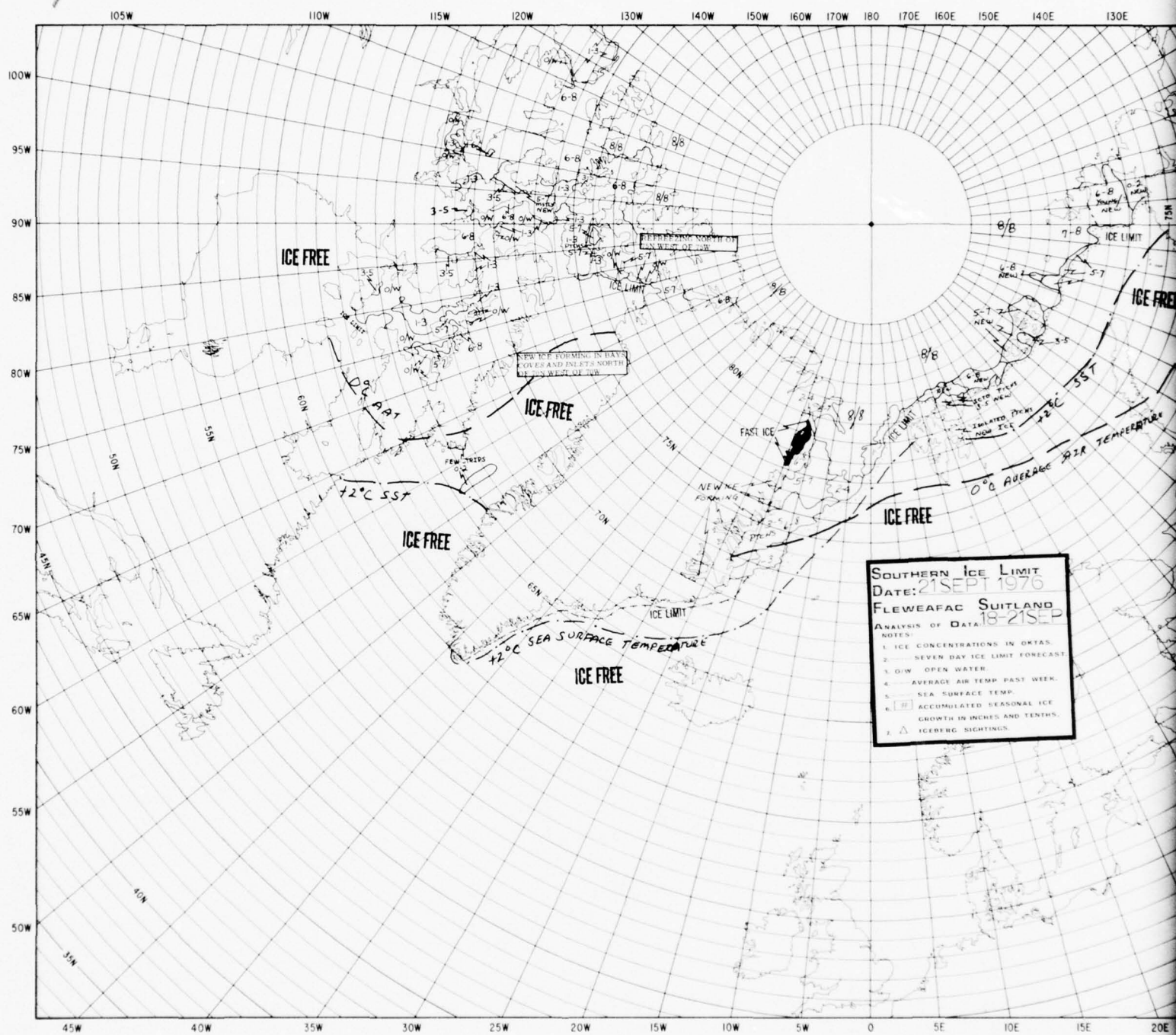




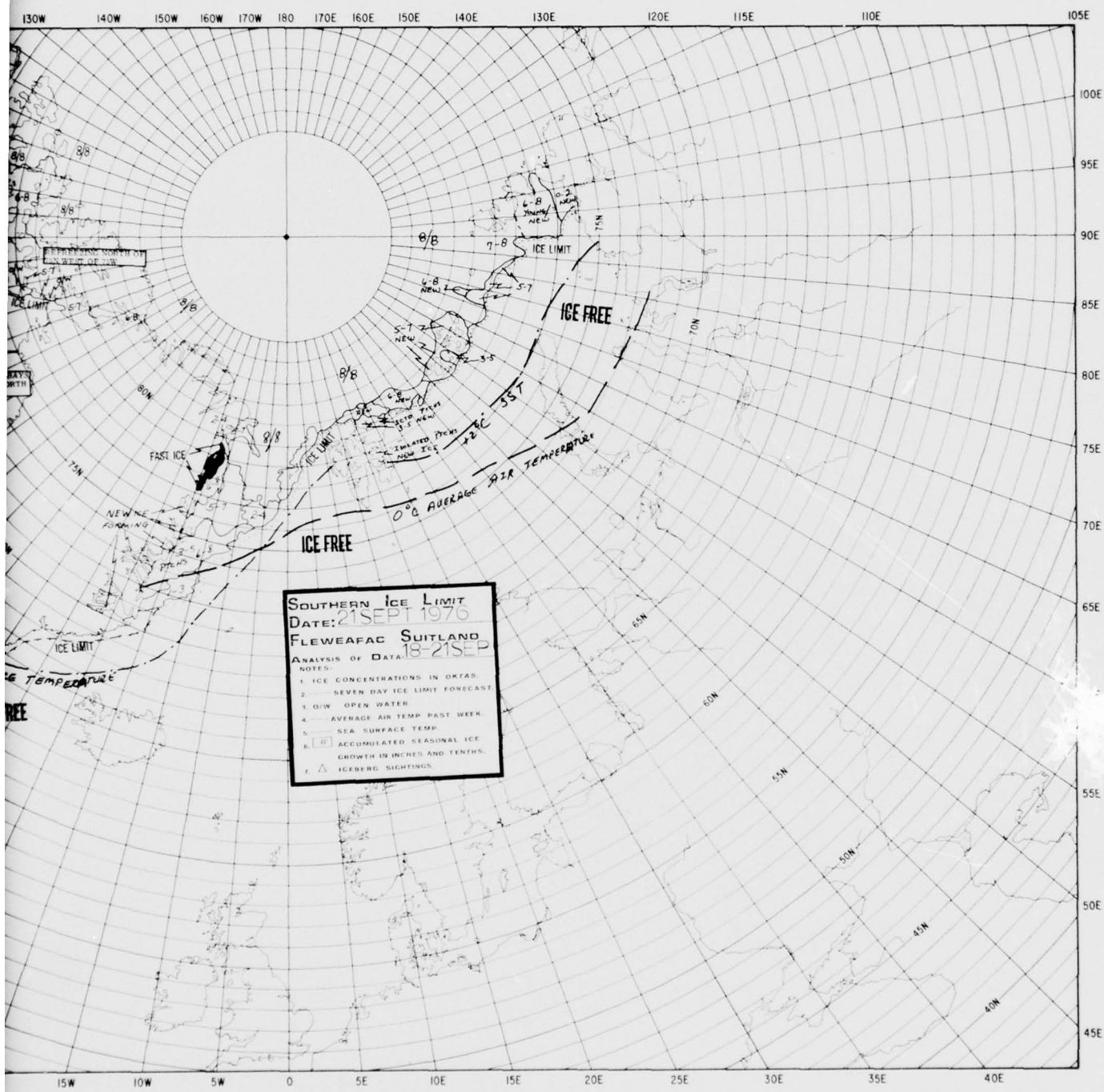


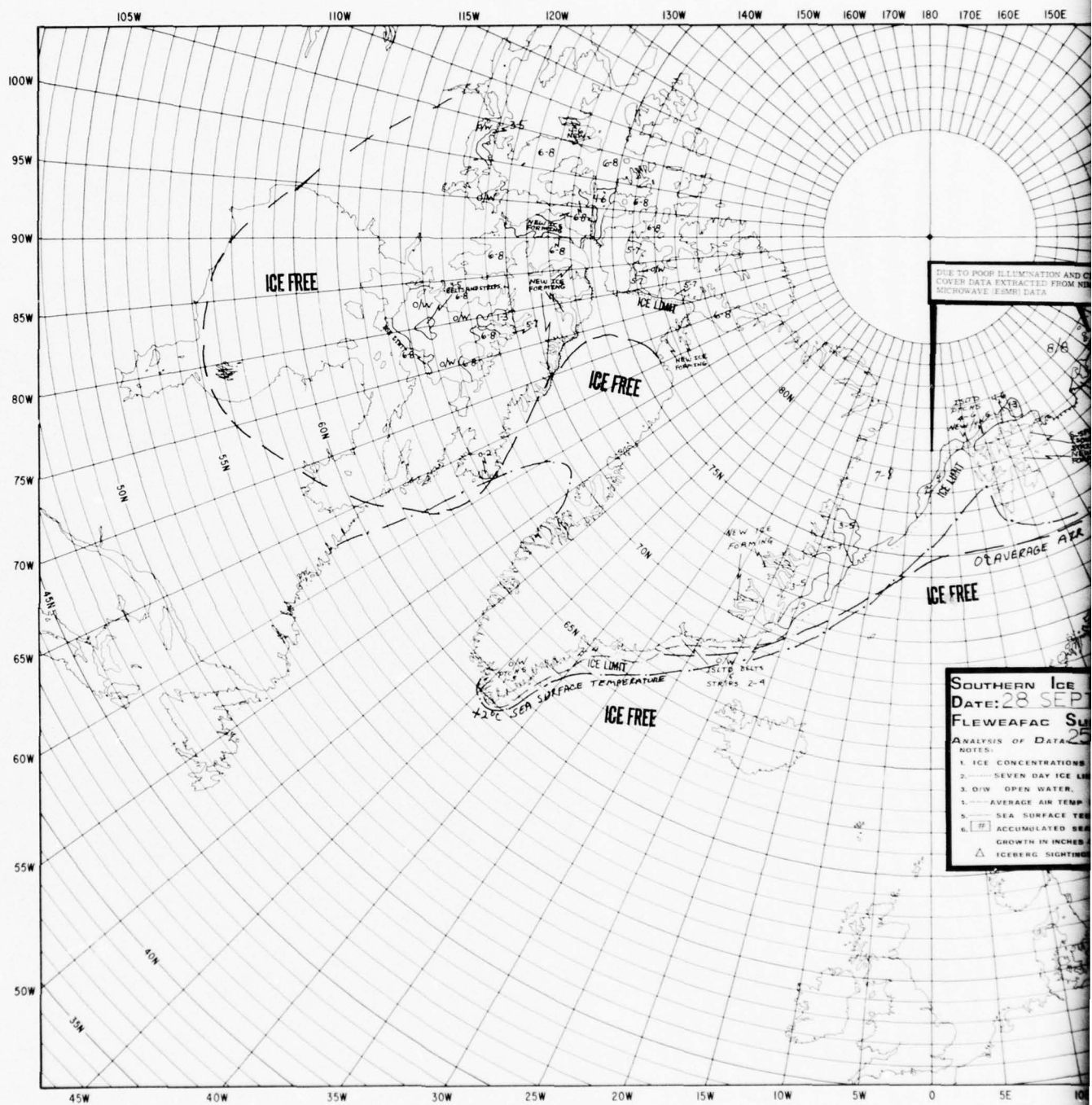


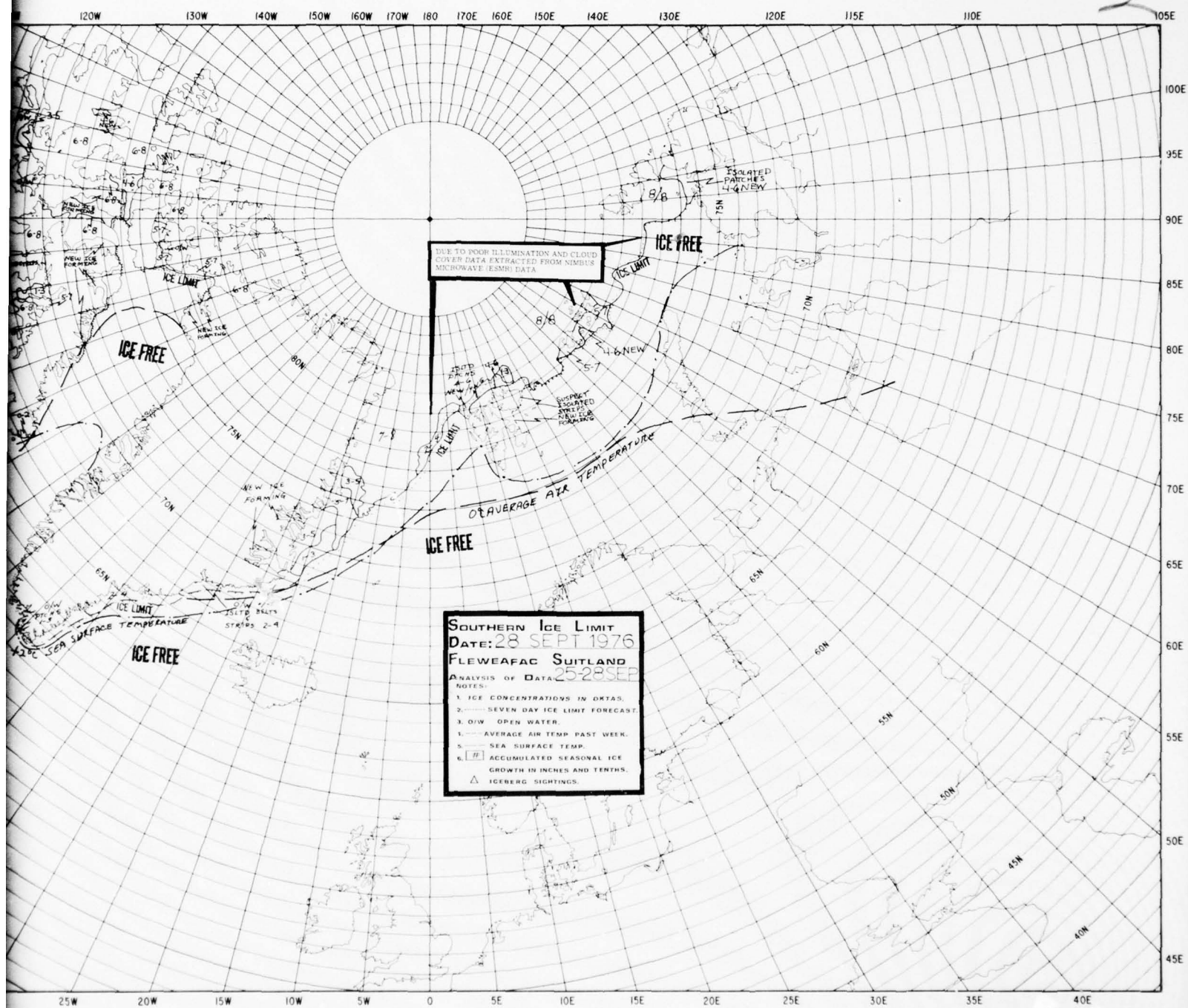


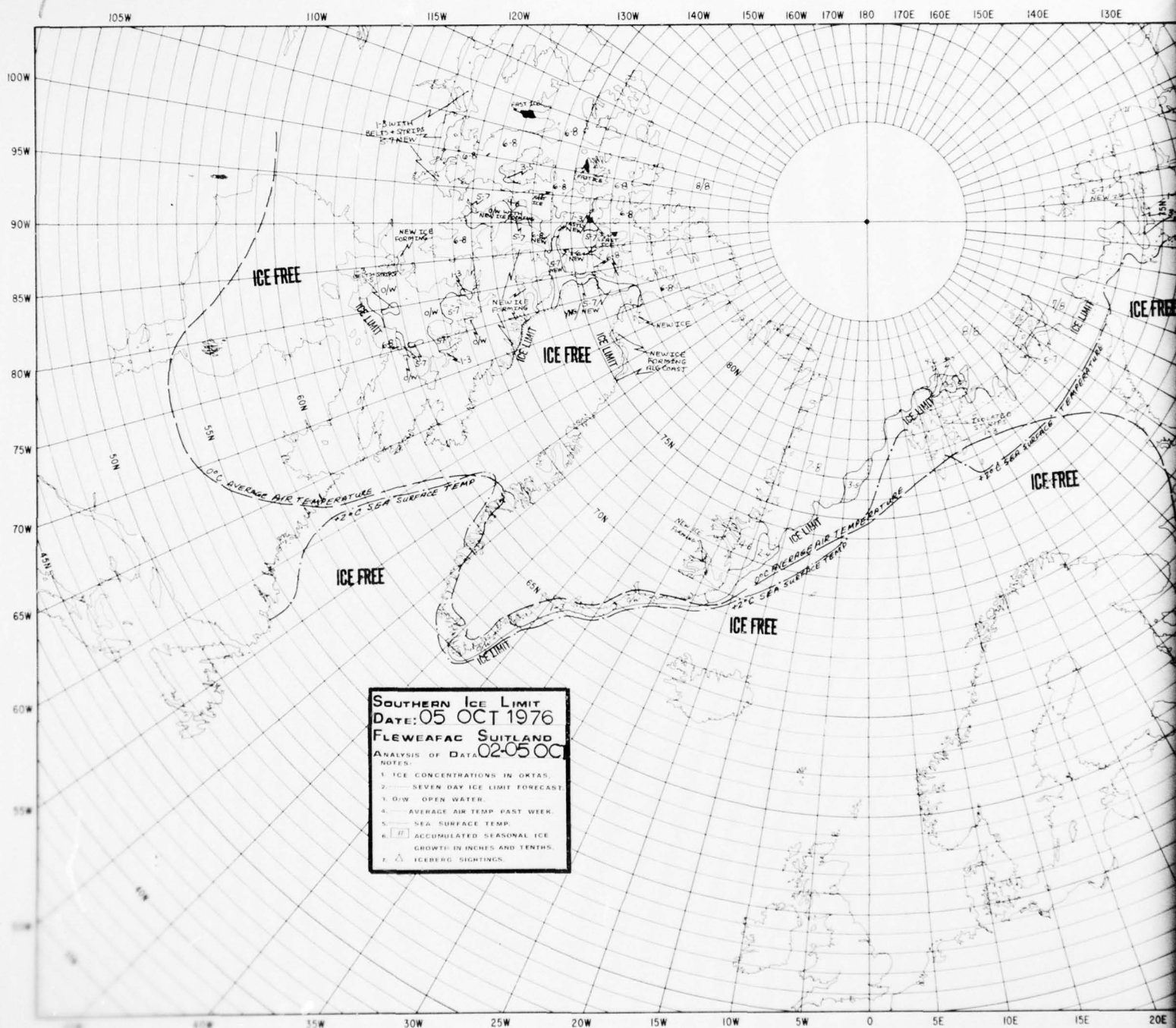


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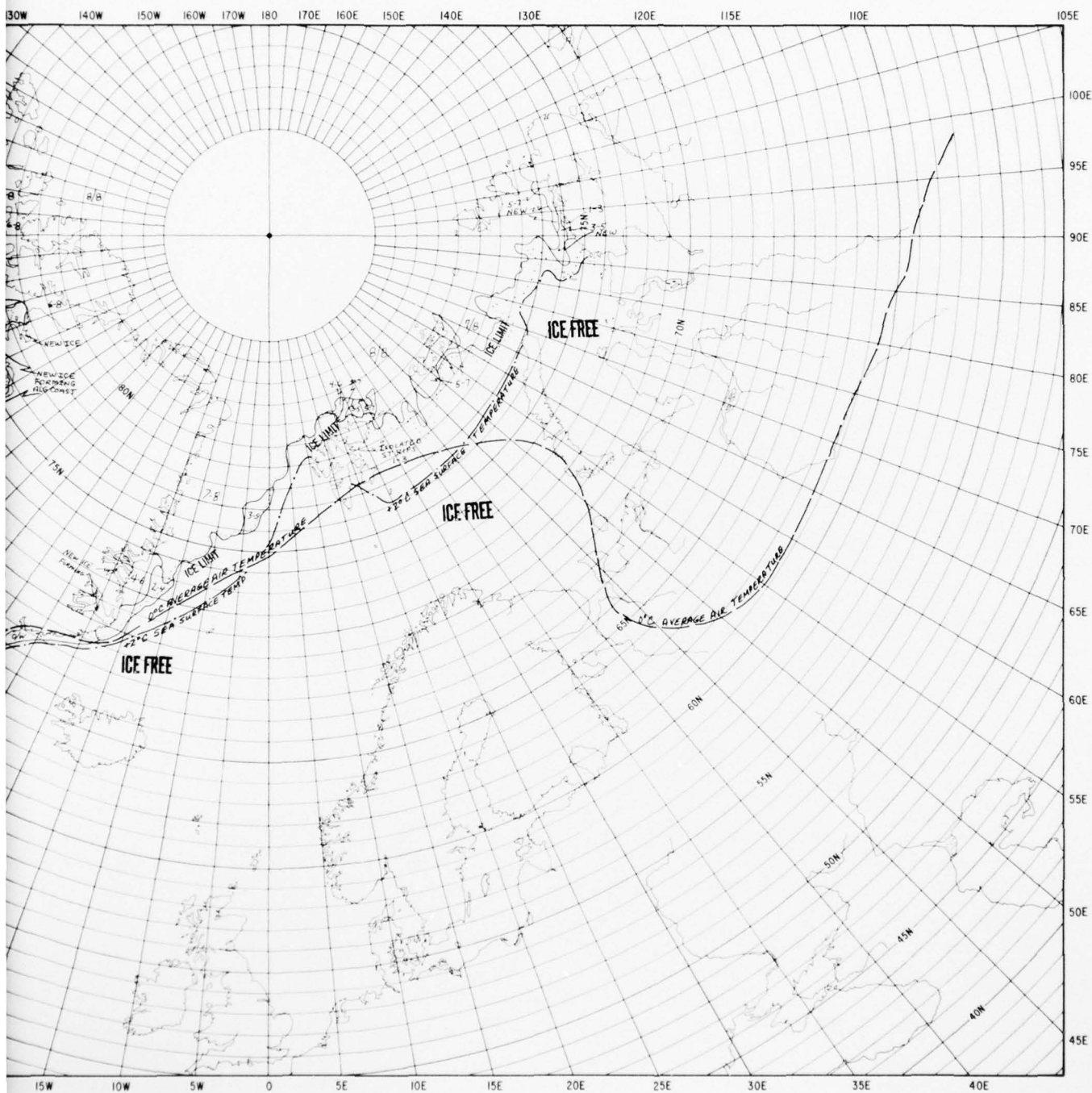


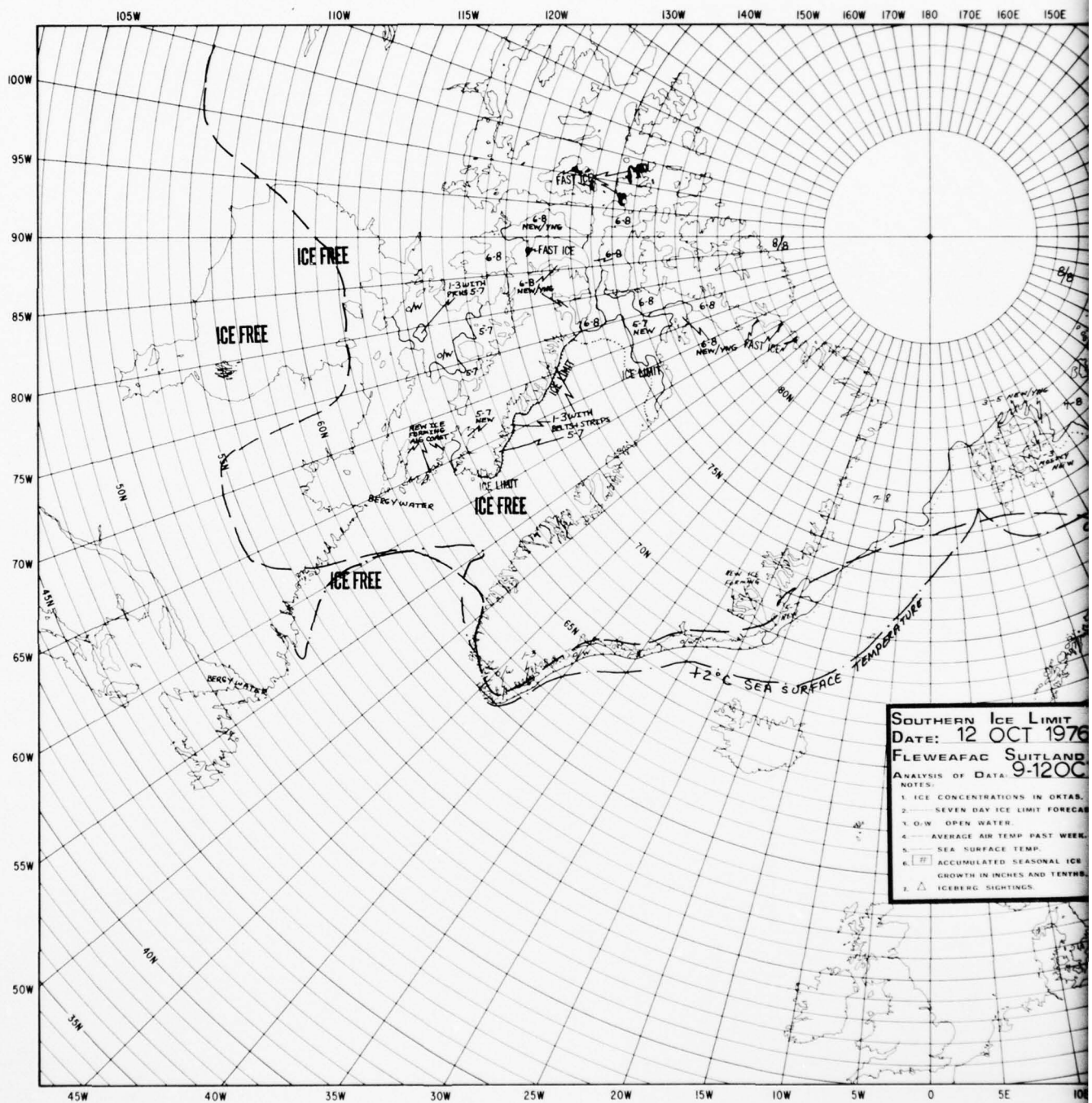


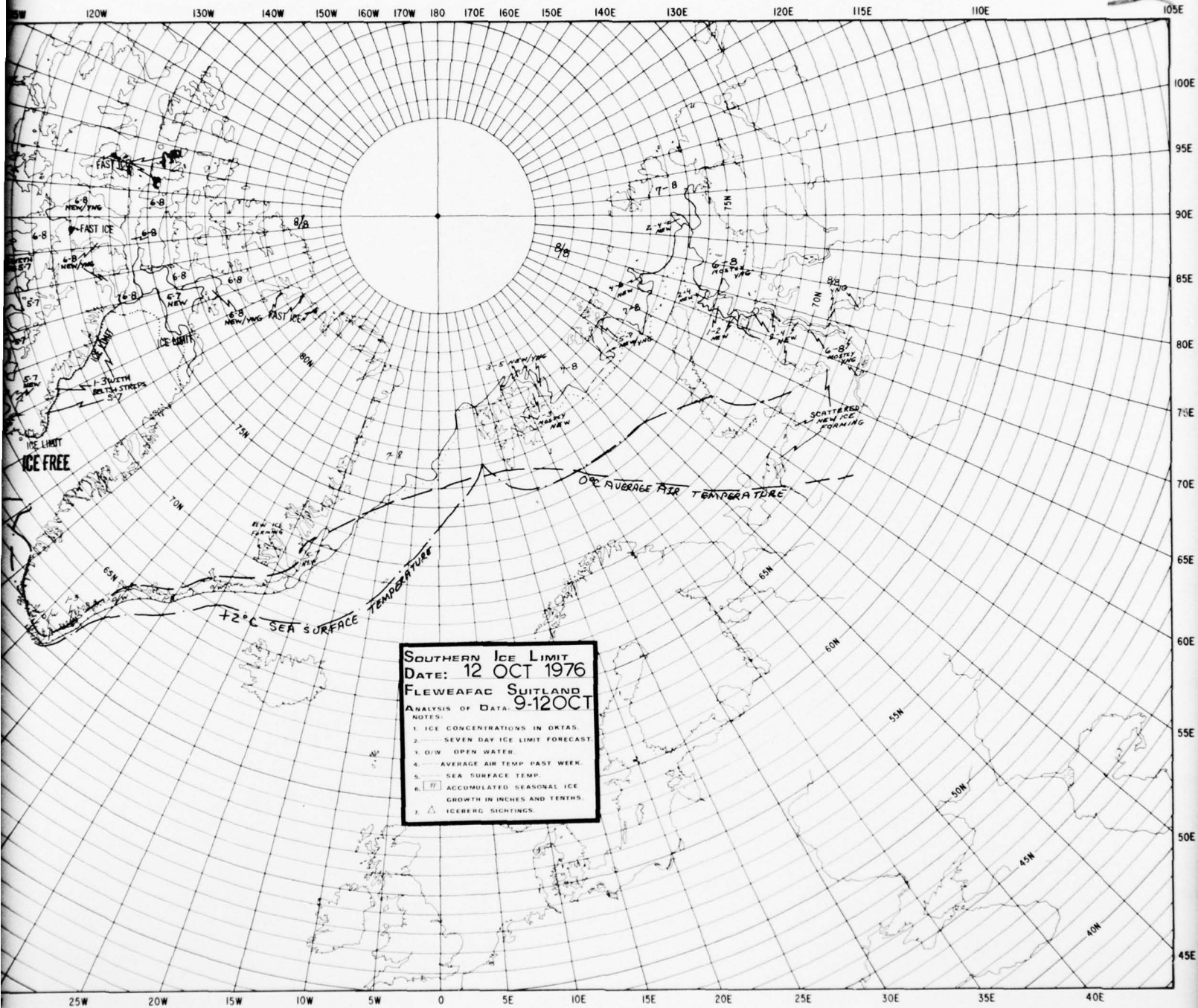


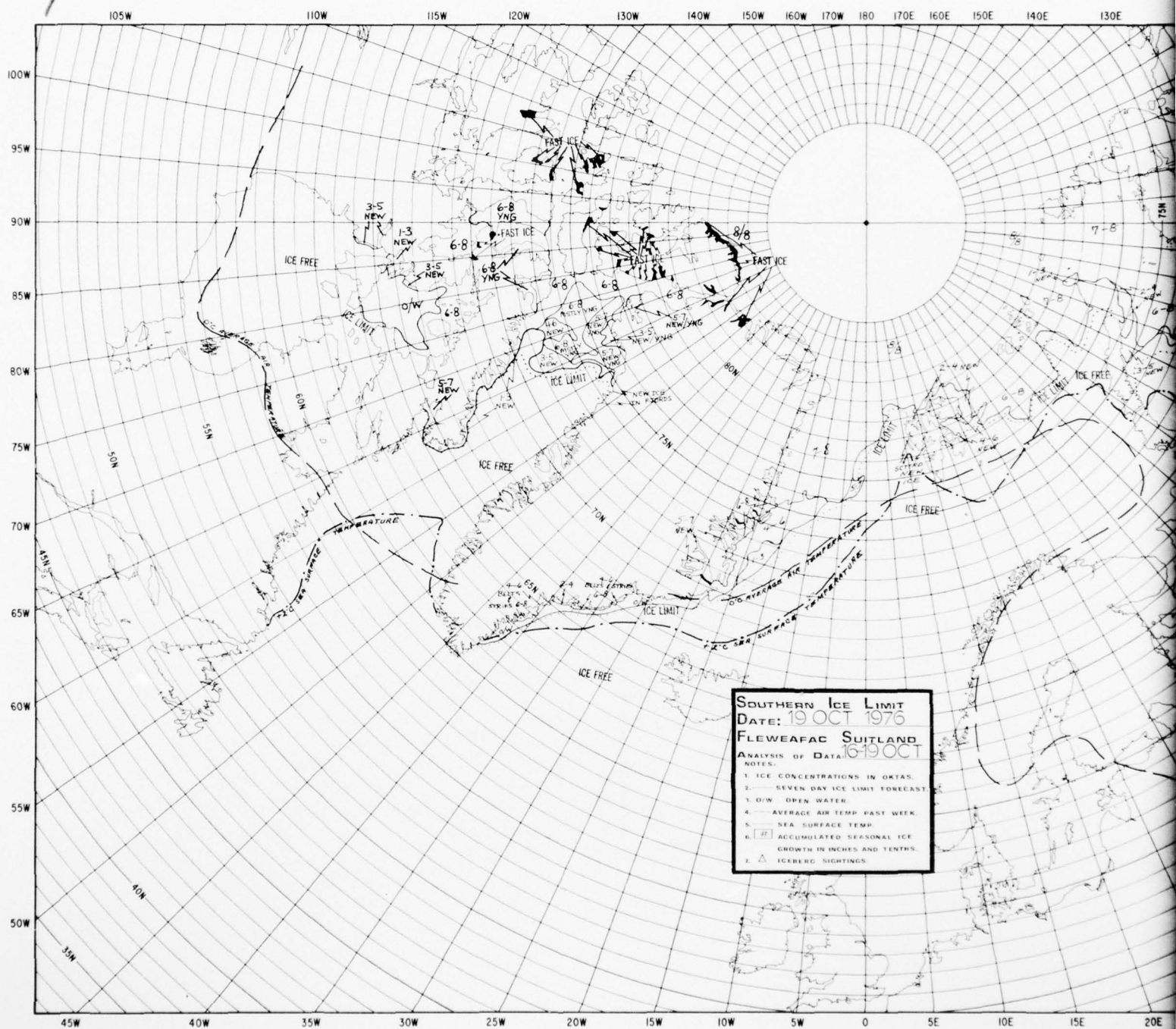


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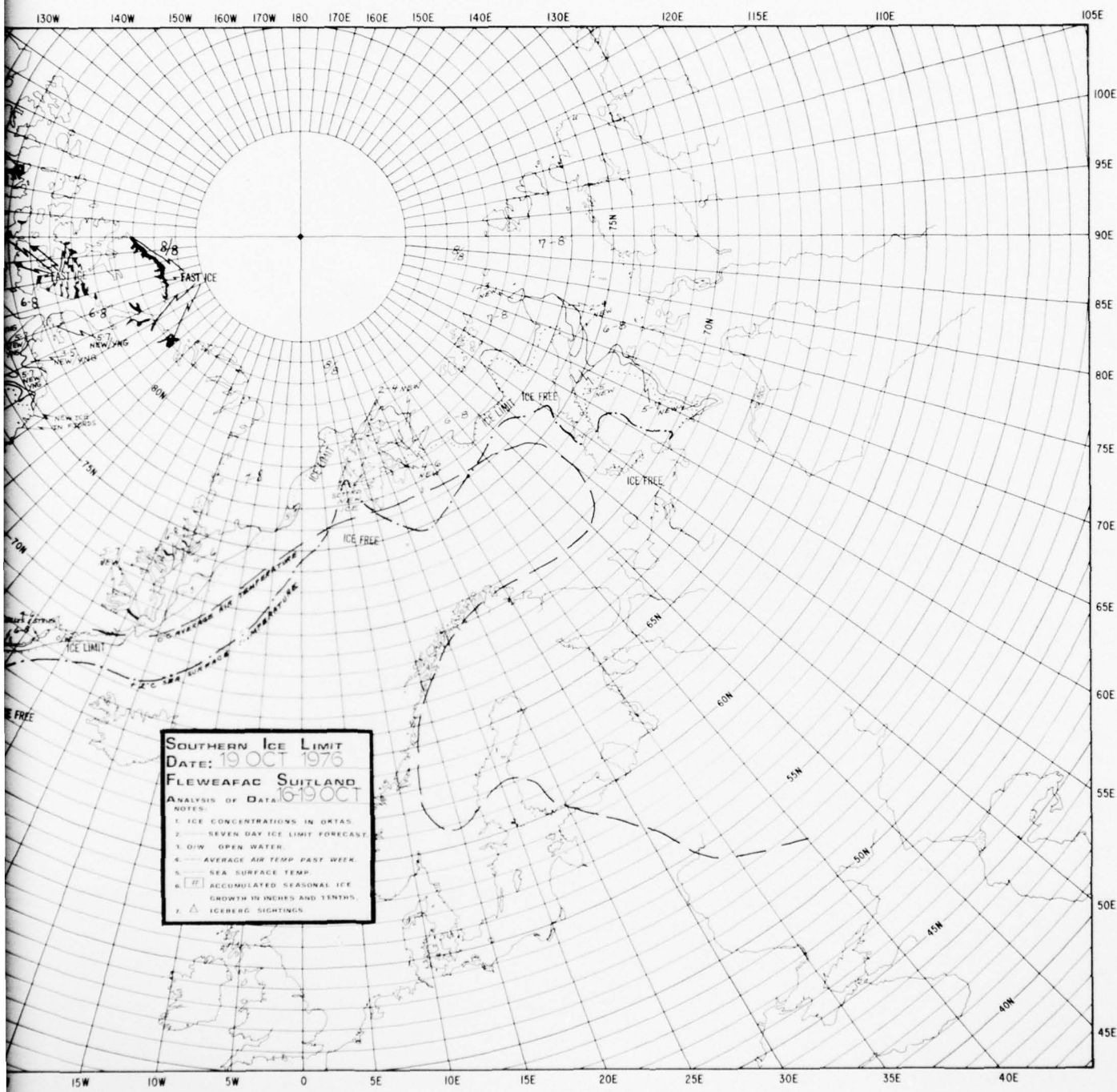


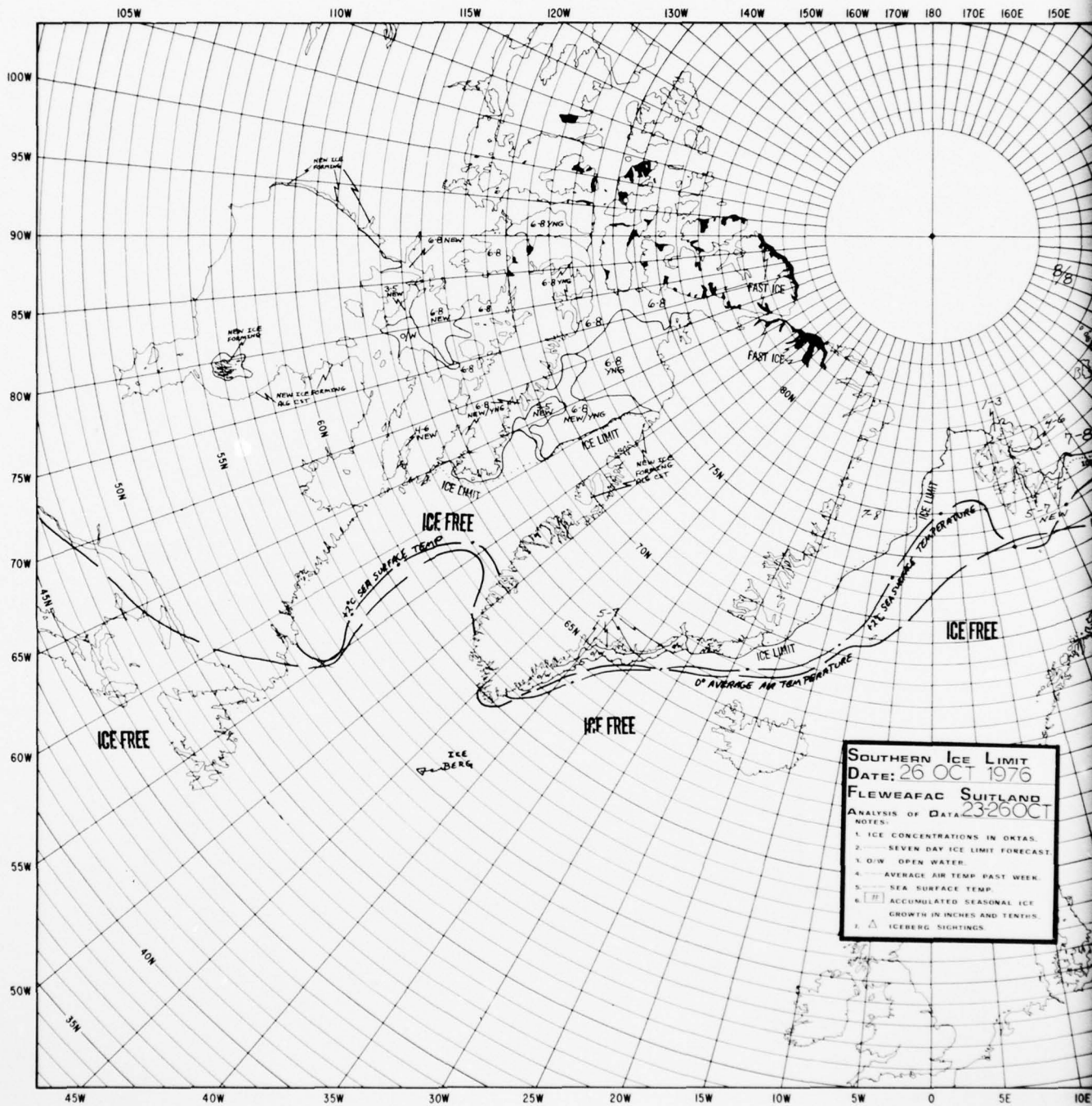


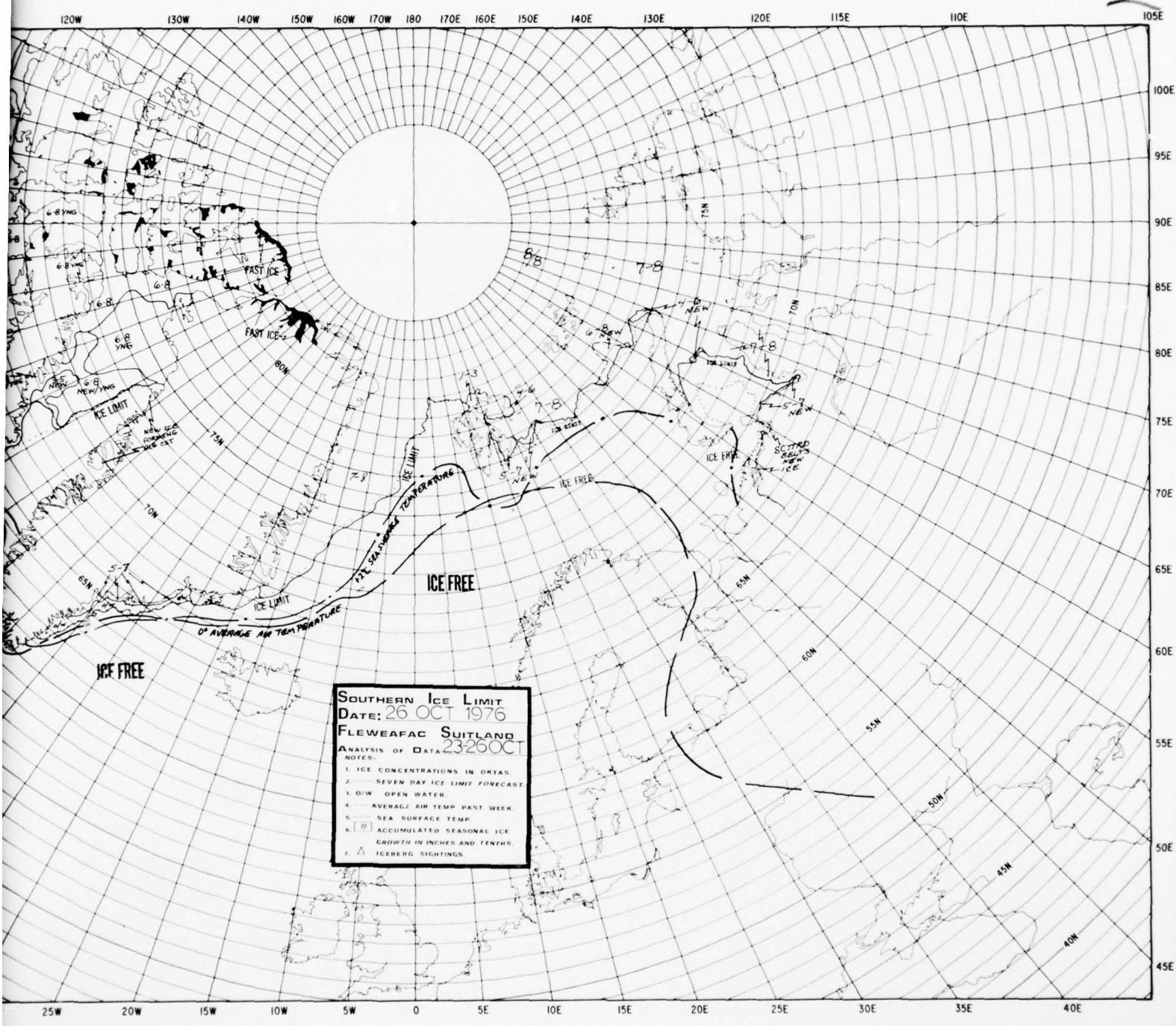


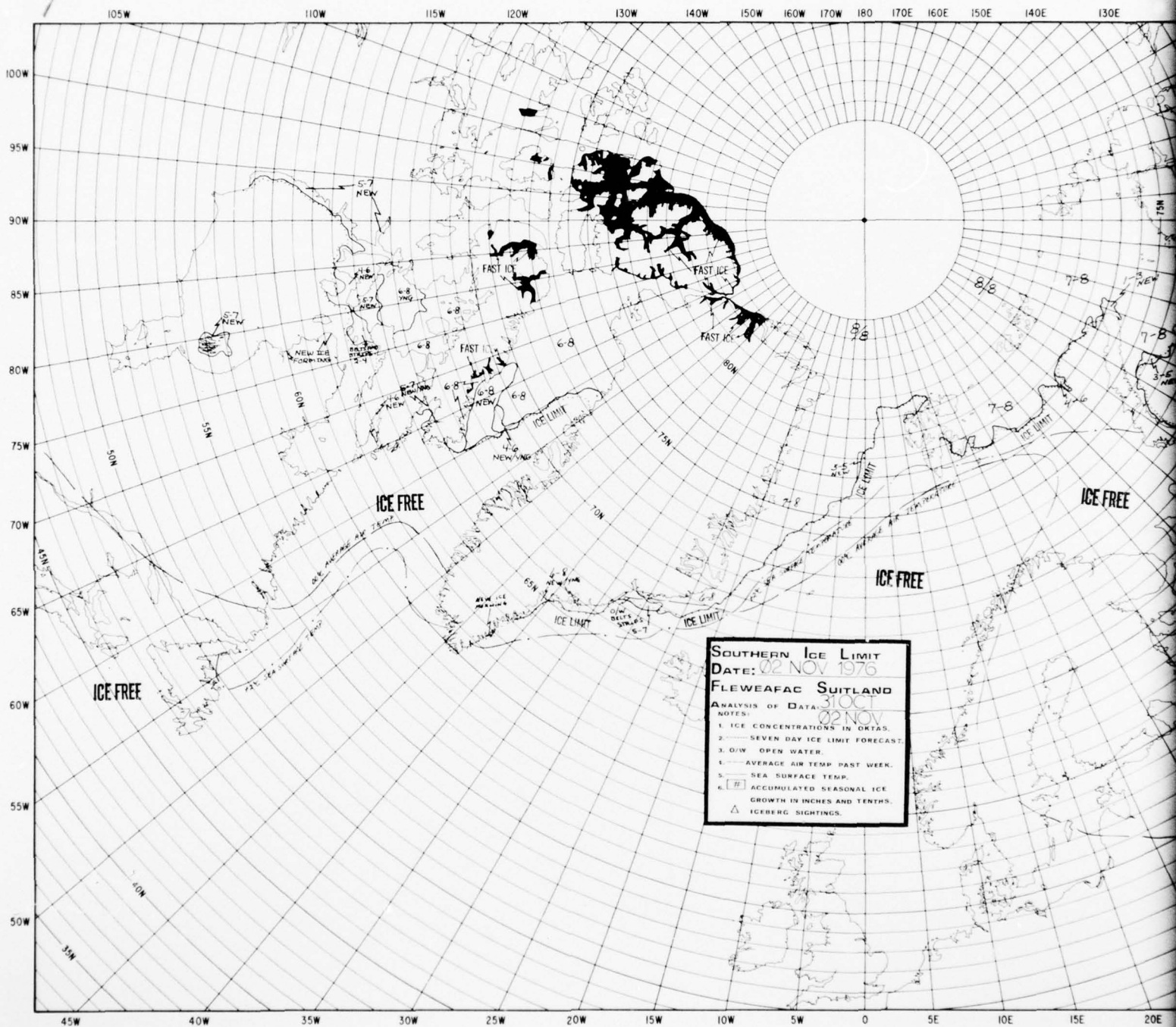


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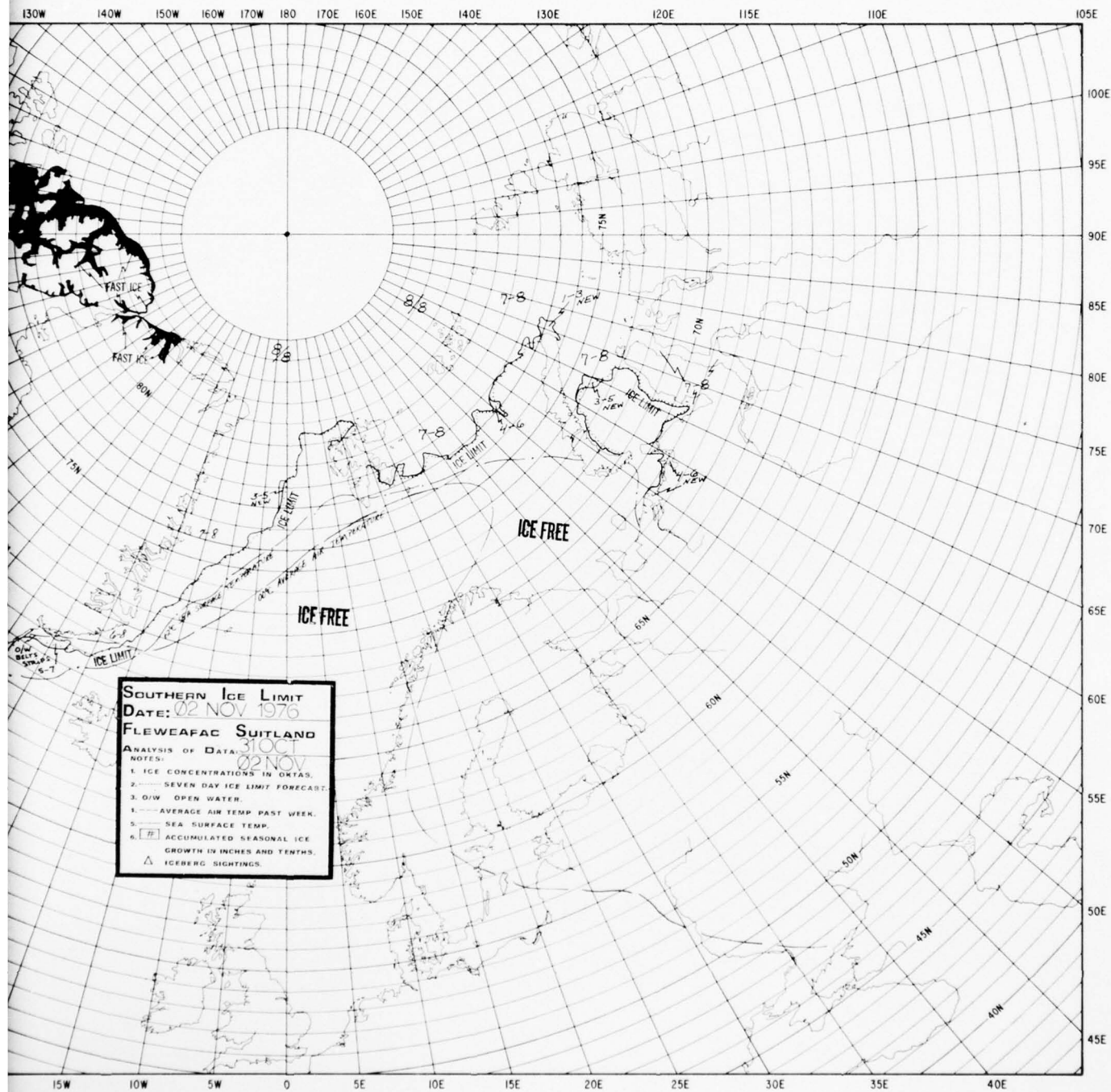


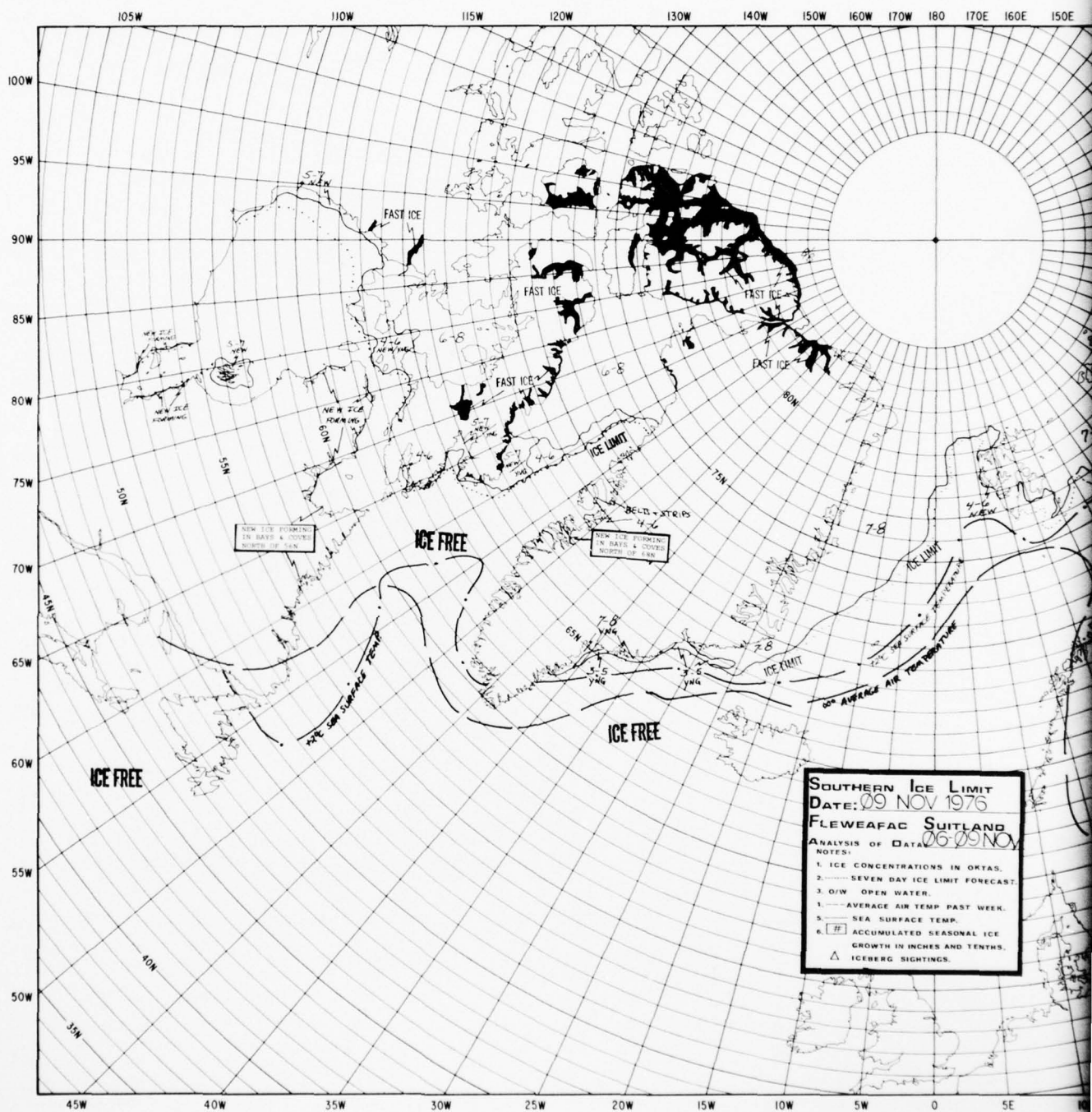




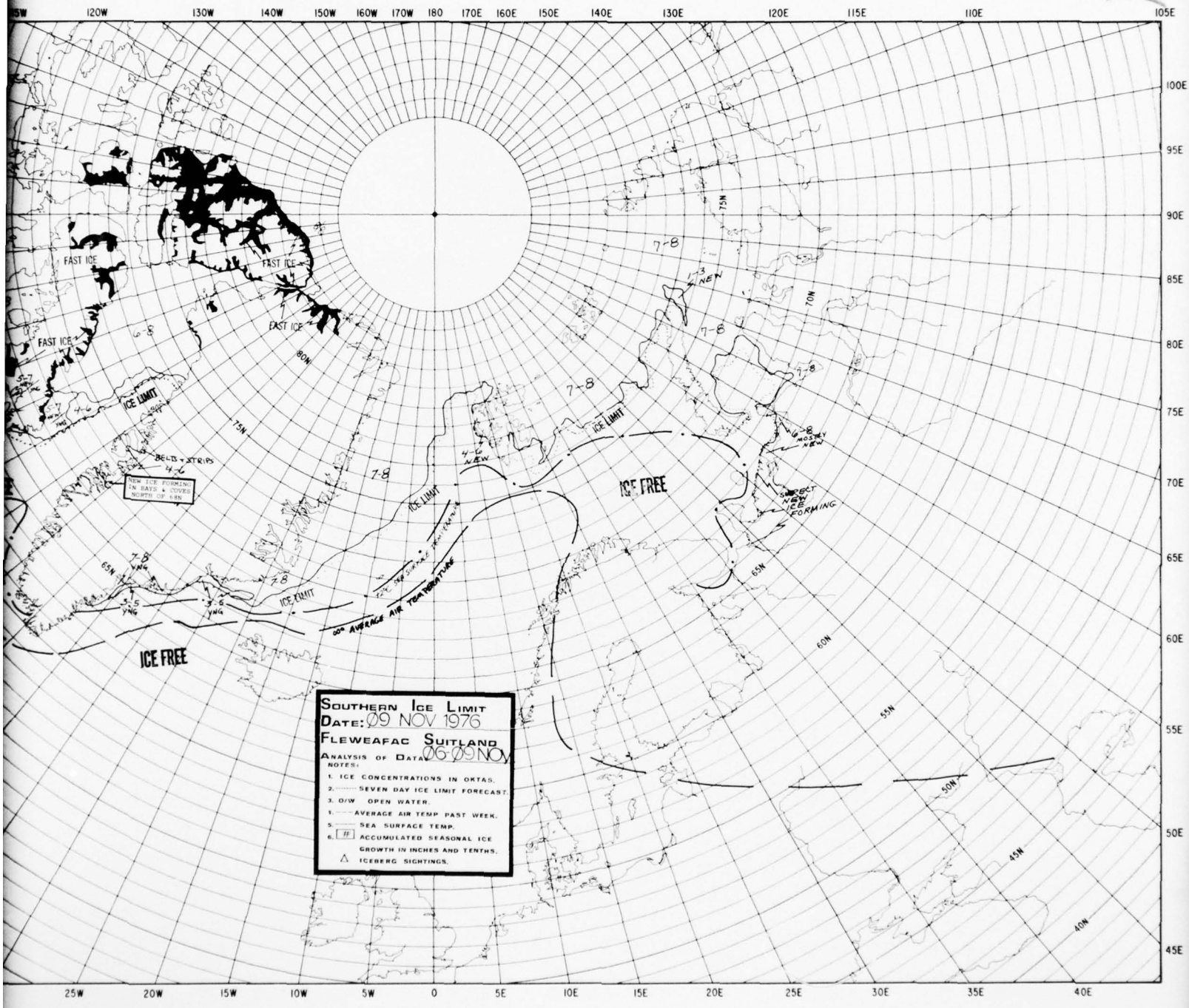


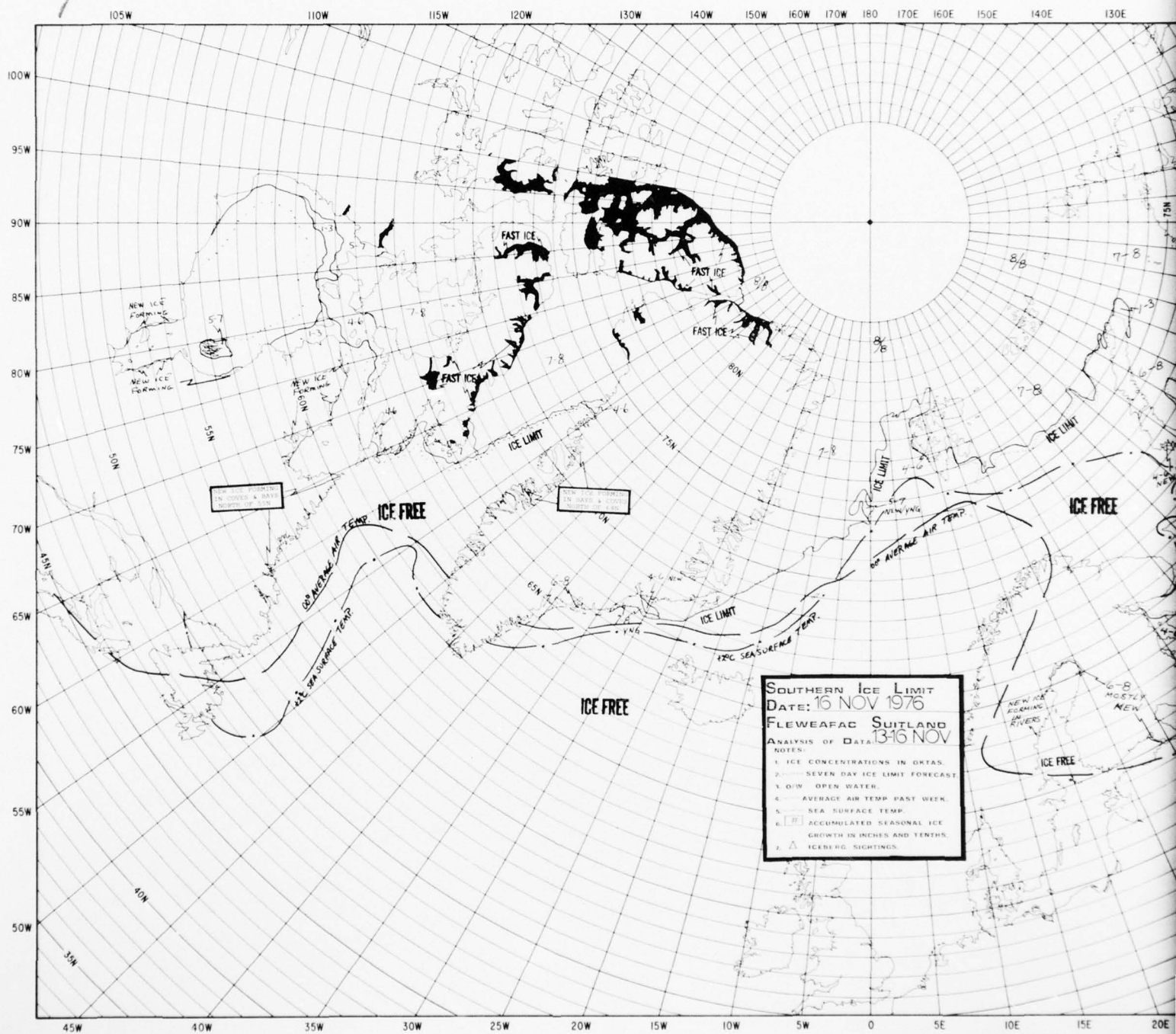
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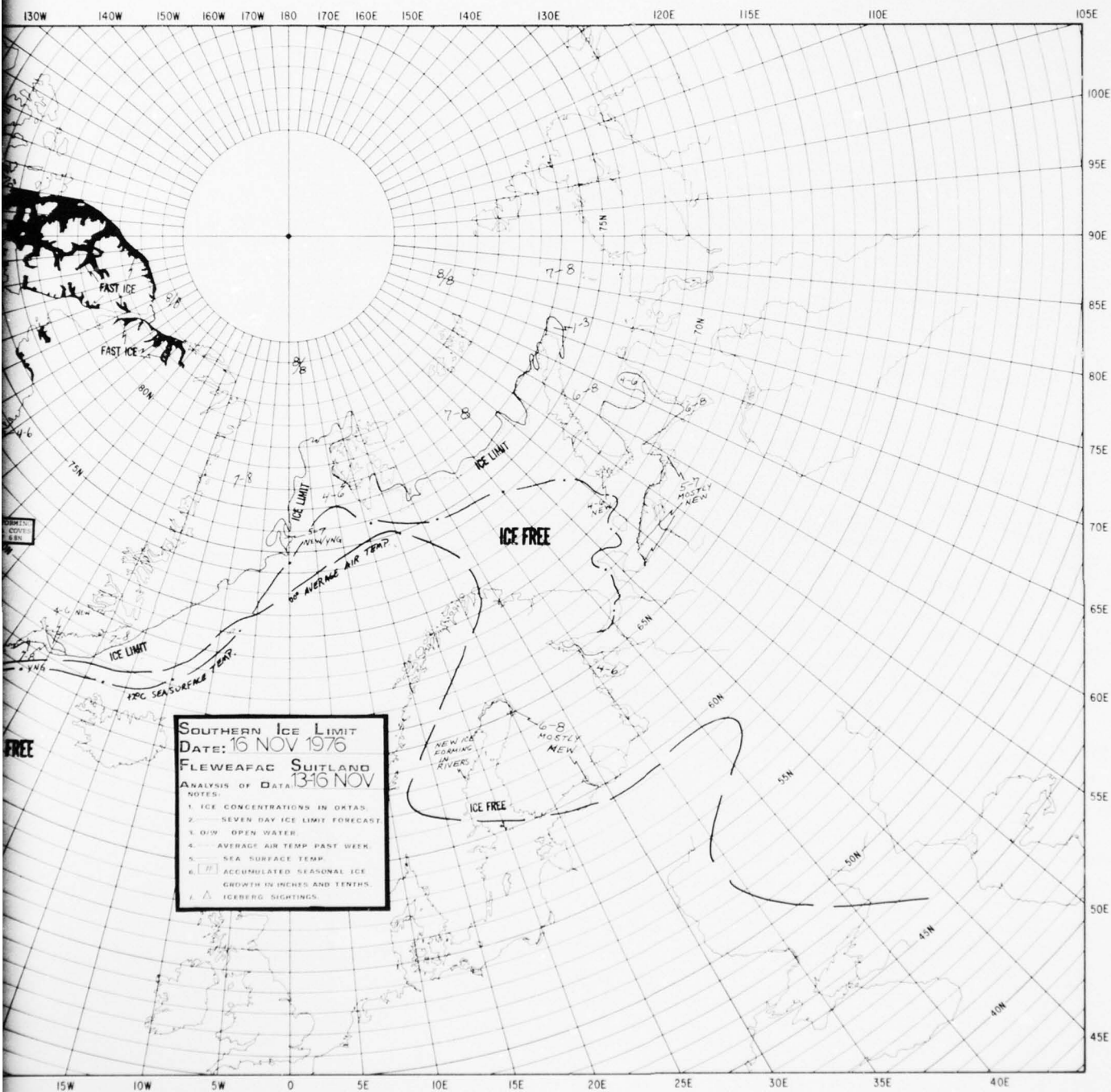


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AD-A043 353

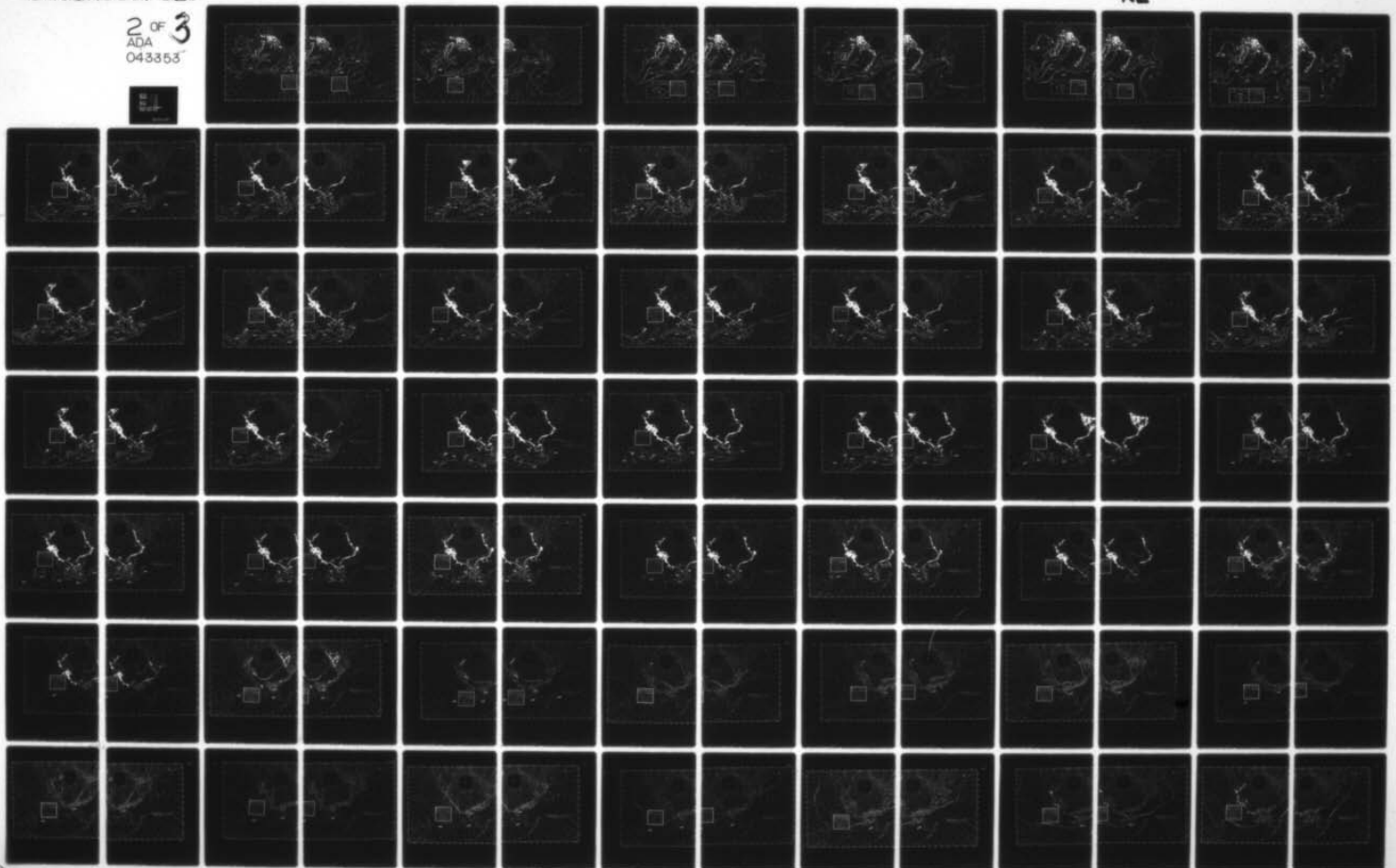
FLEET WEATHER FACILITY SUITLAND MD
EASTERN-WESTERN ARCTIC SEA ICE ANALYSES. (U)
1976

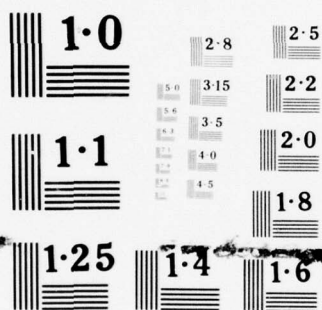
F/G 8/12

UNCLASSIFIED

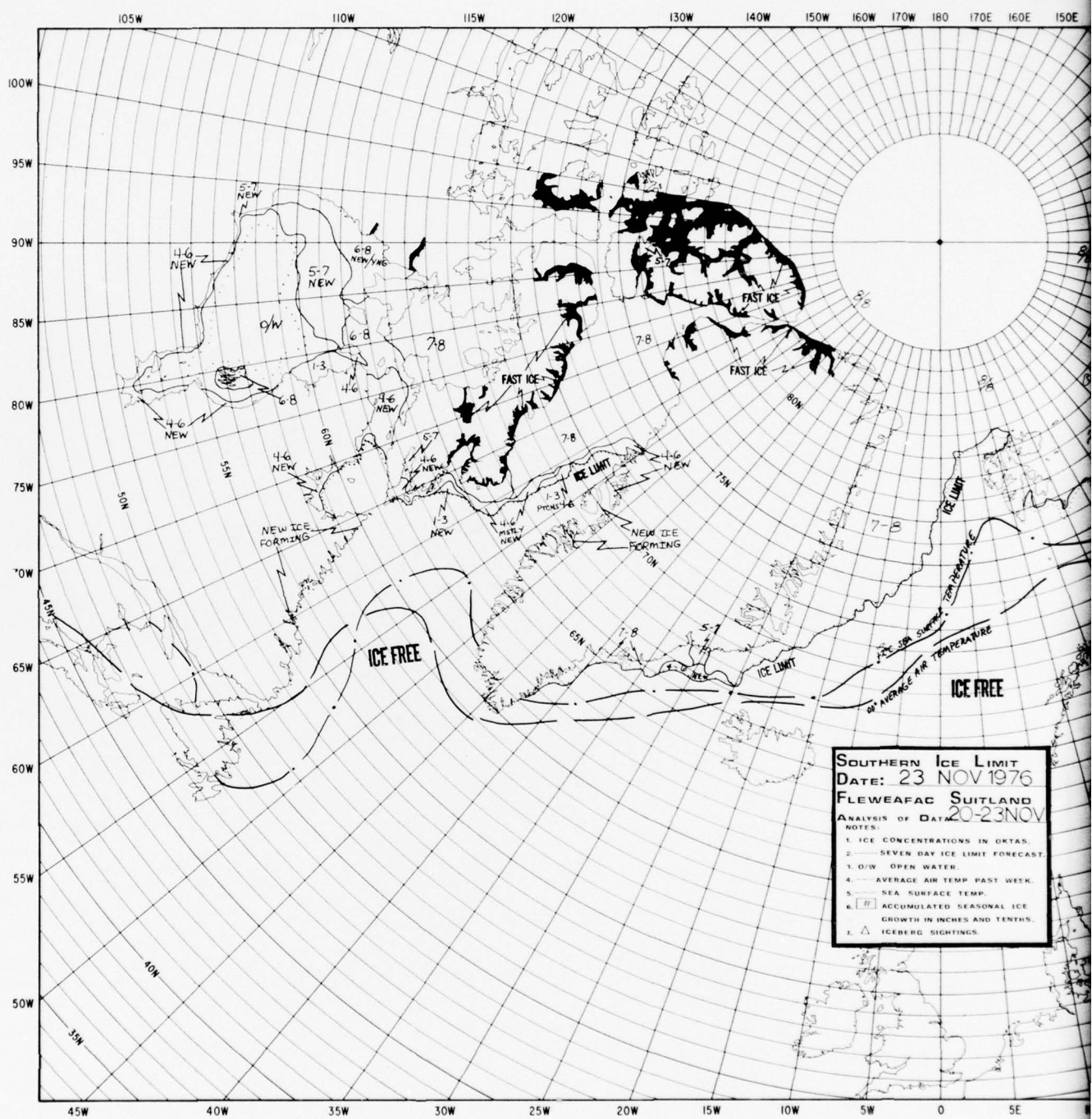
2 OF 3
ADA
043353

NL

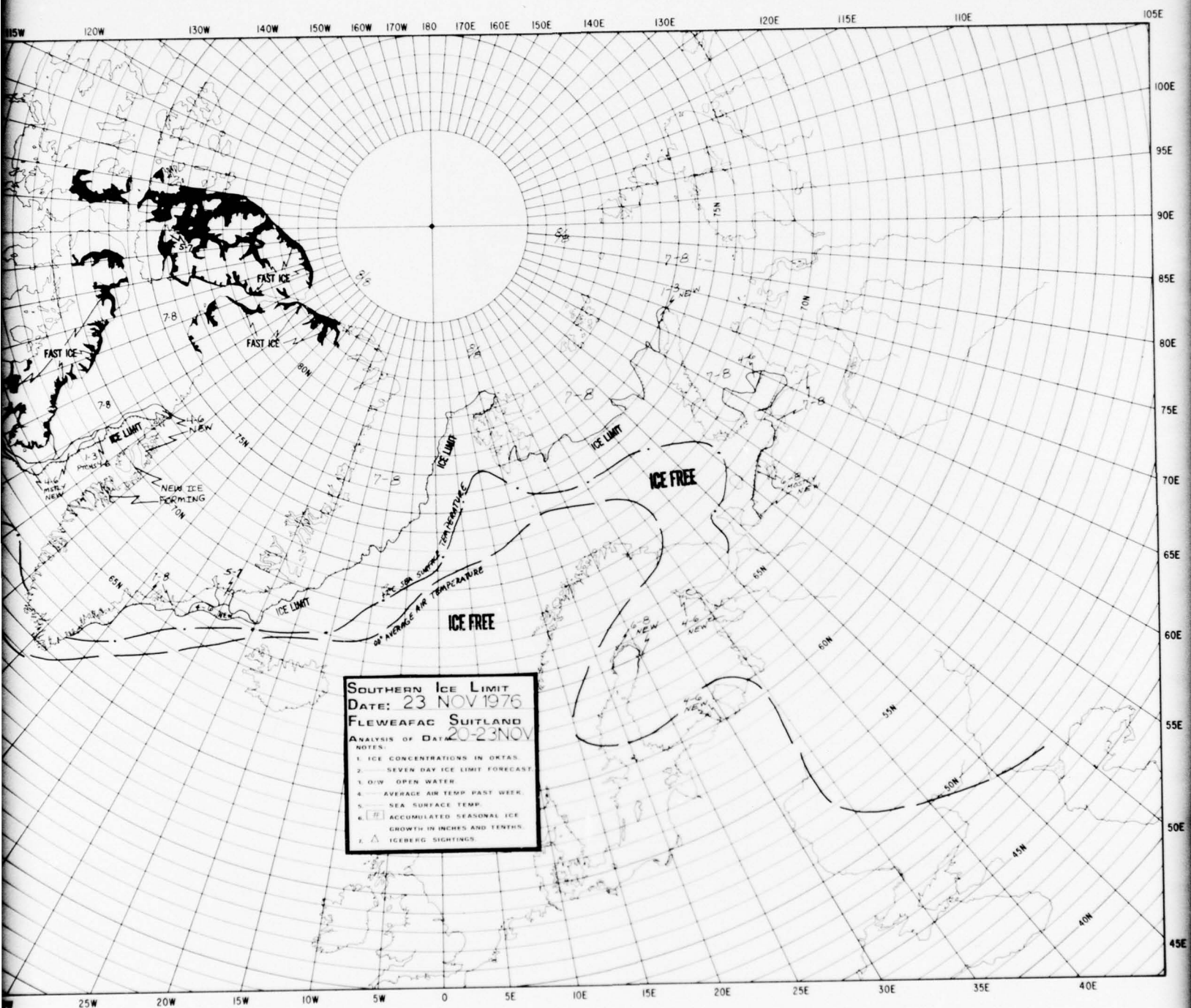


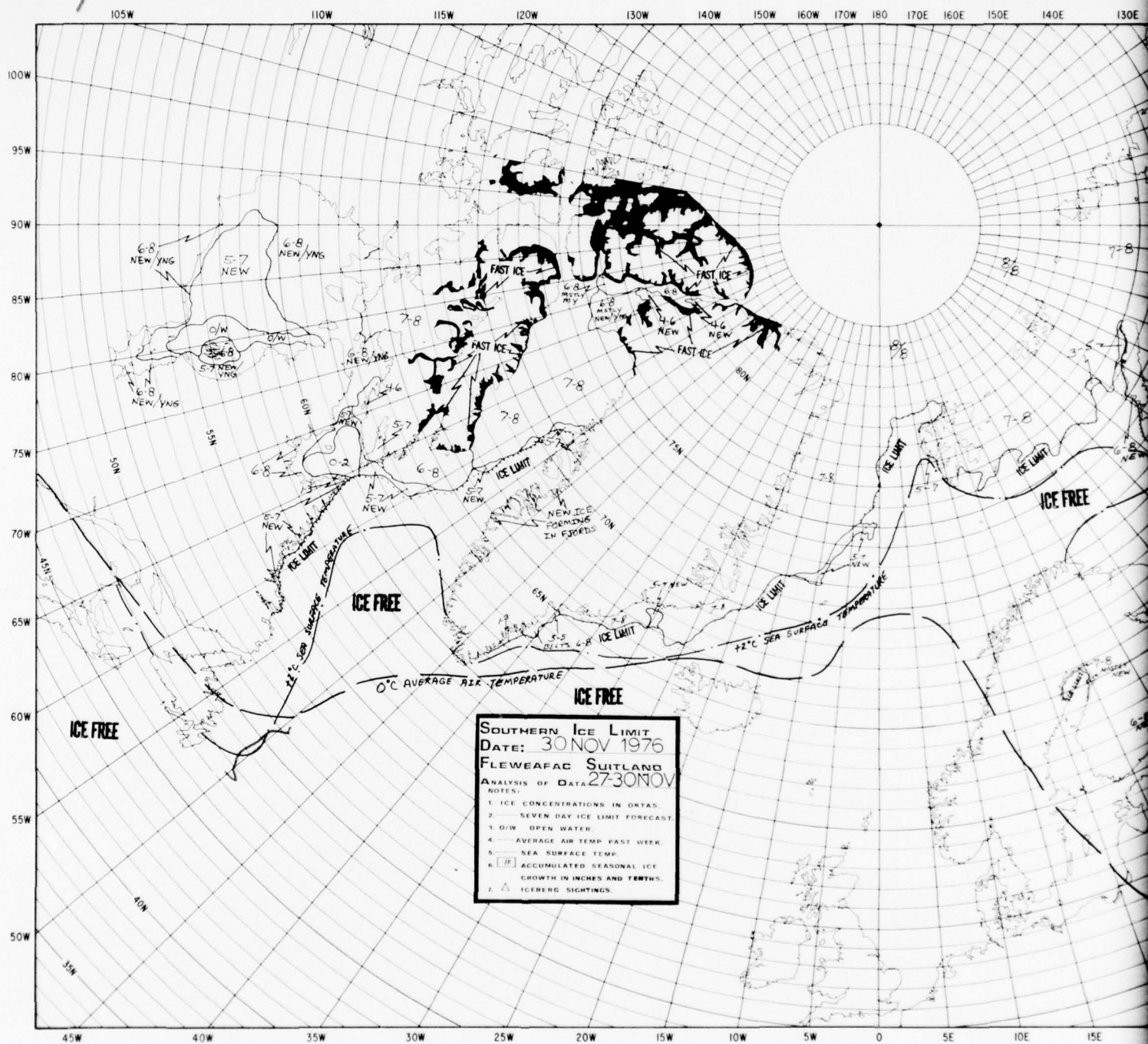


NATIONAL BUREAU OF STANDARDS
MICROCOPY RESOLUTION TEST CHART

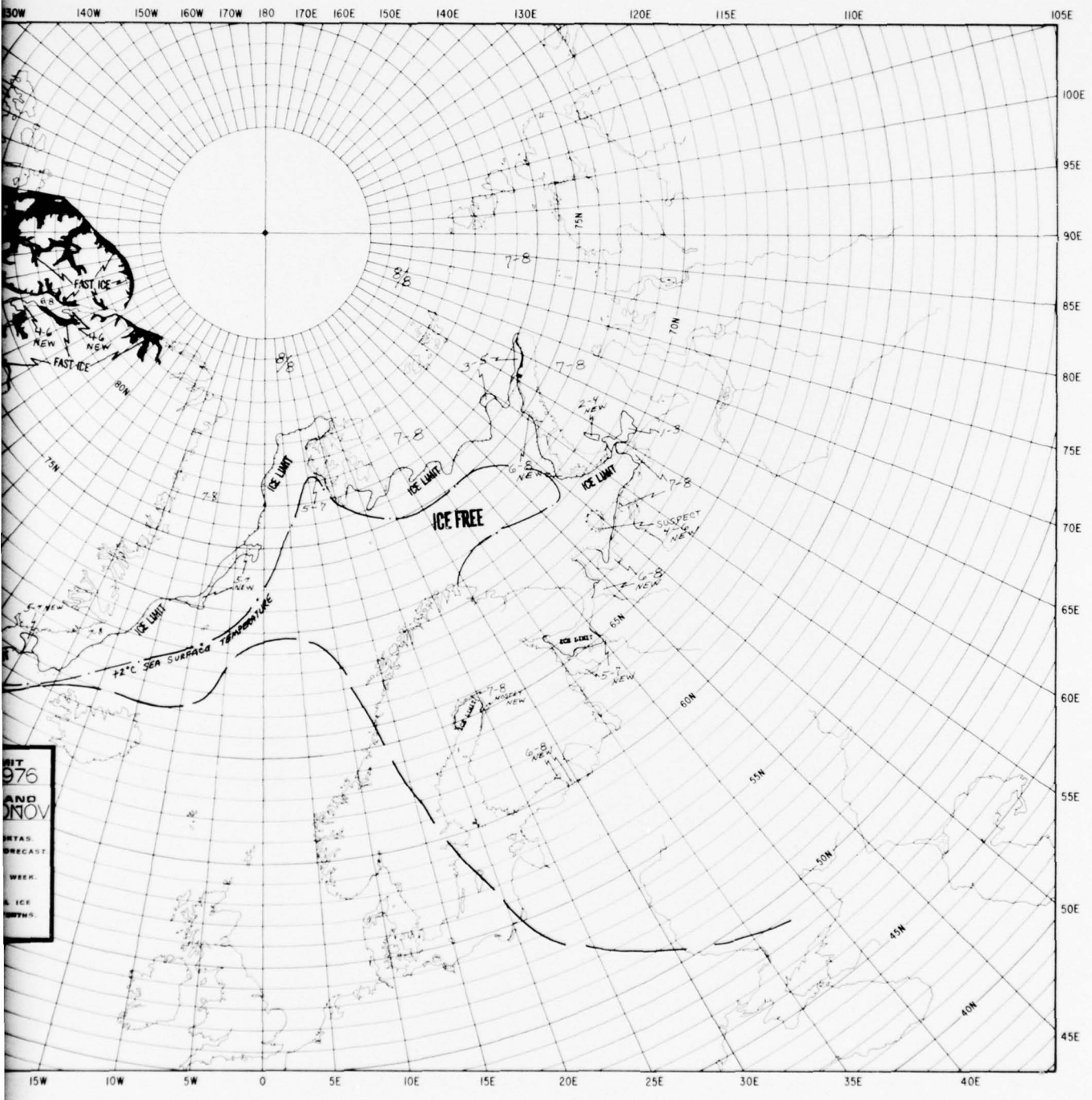


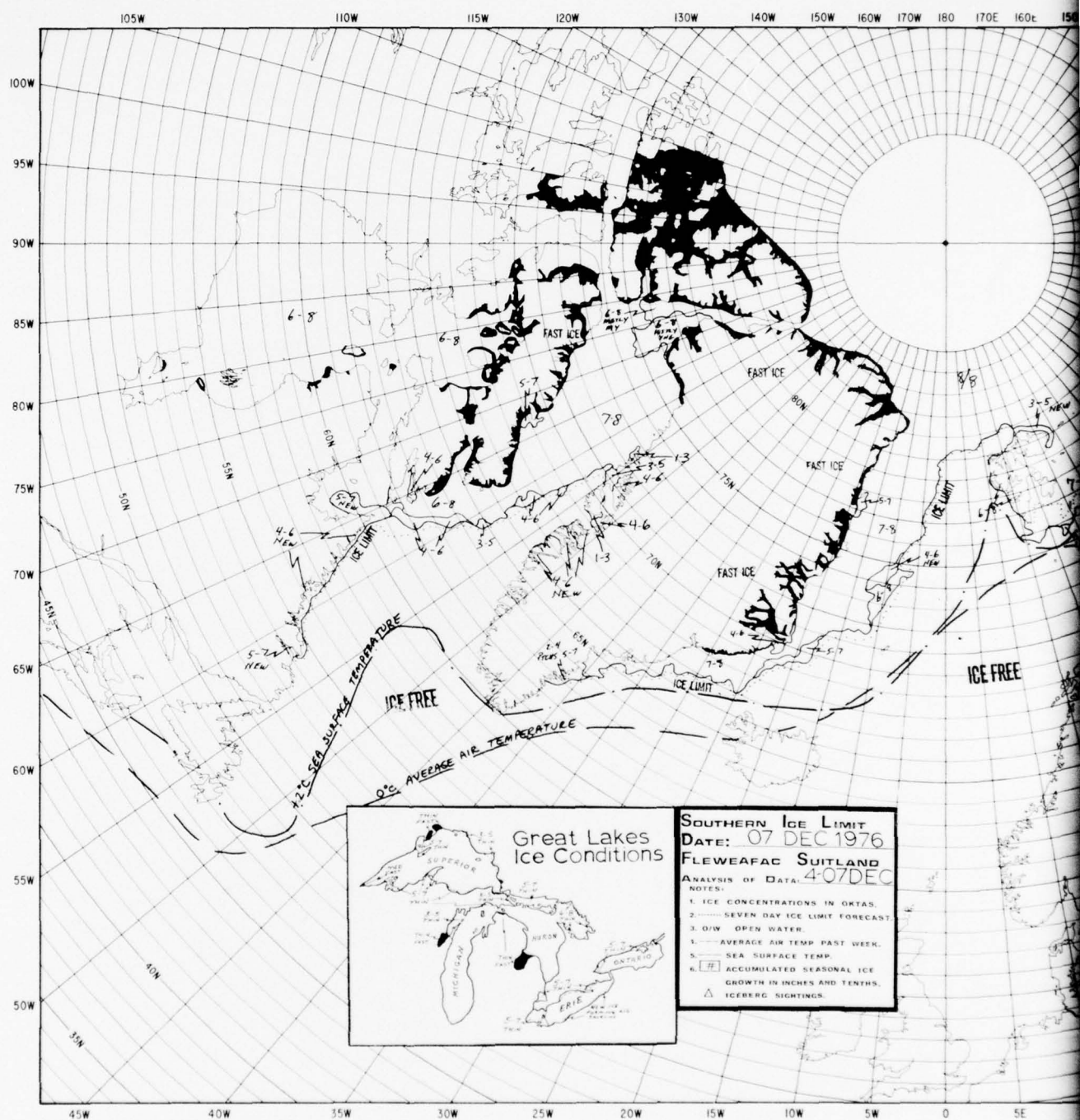
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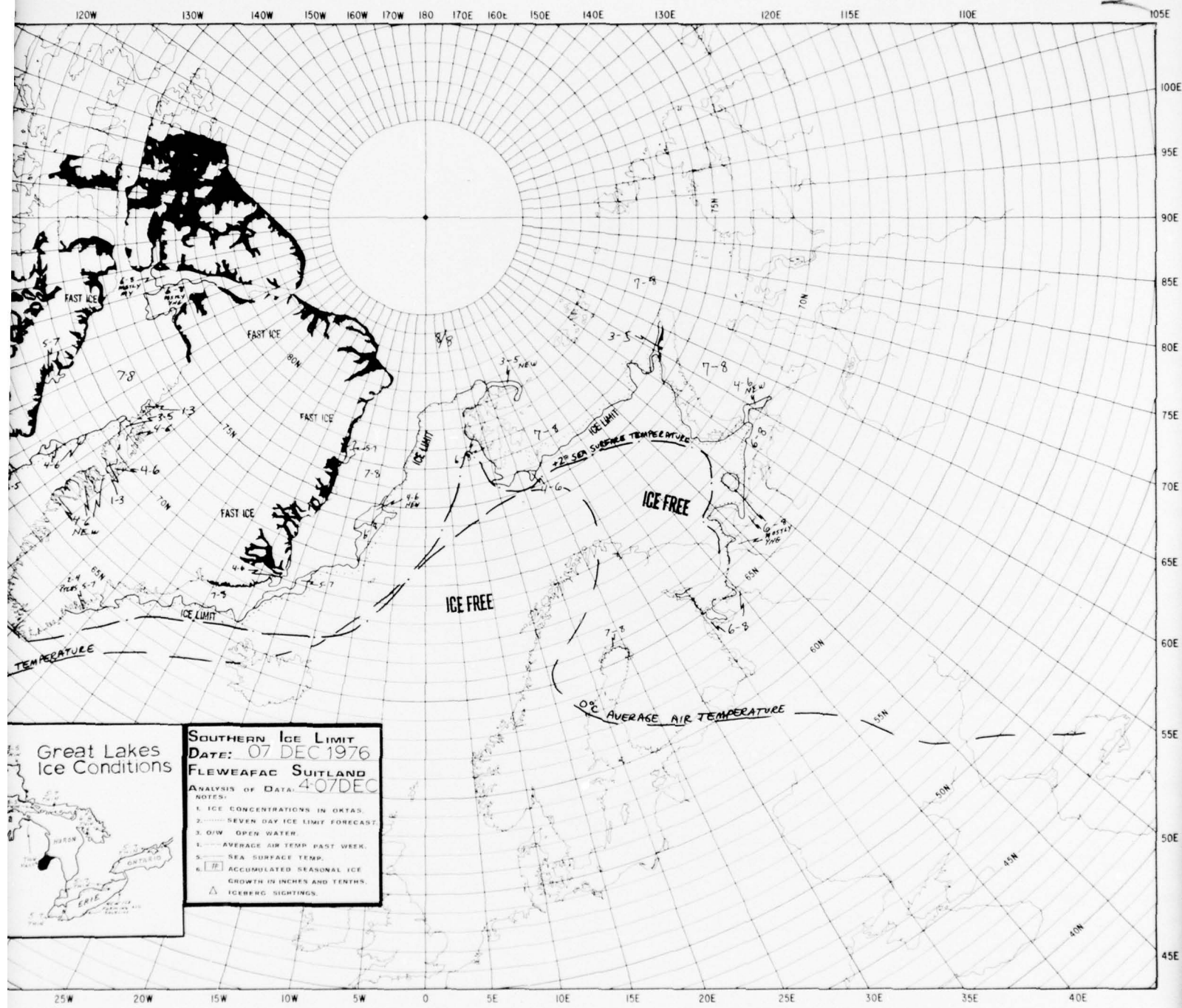


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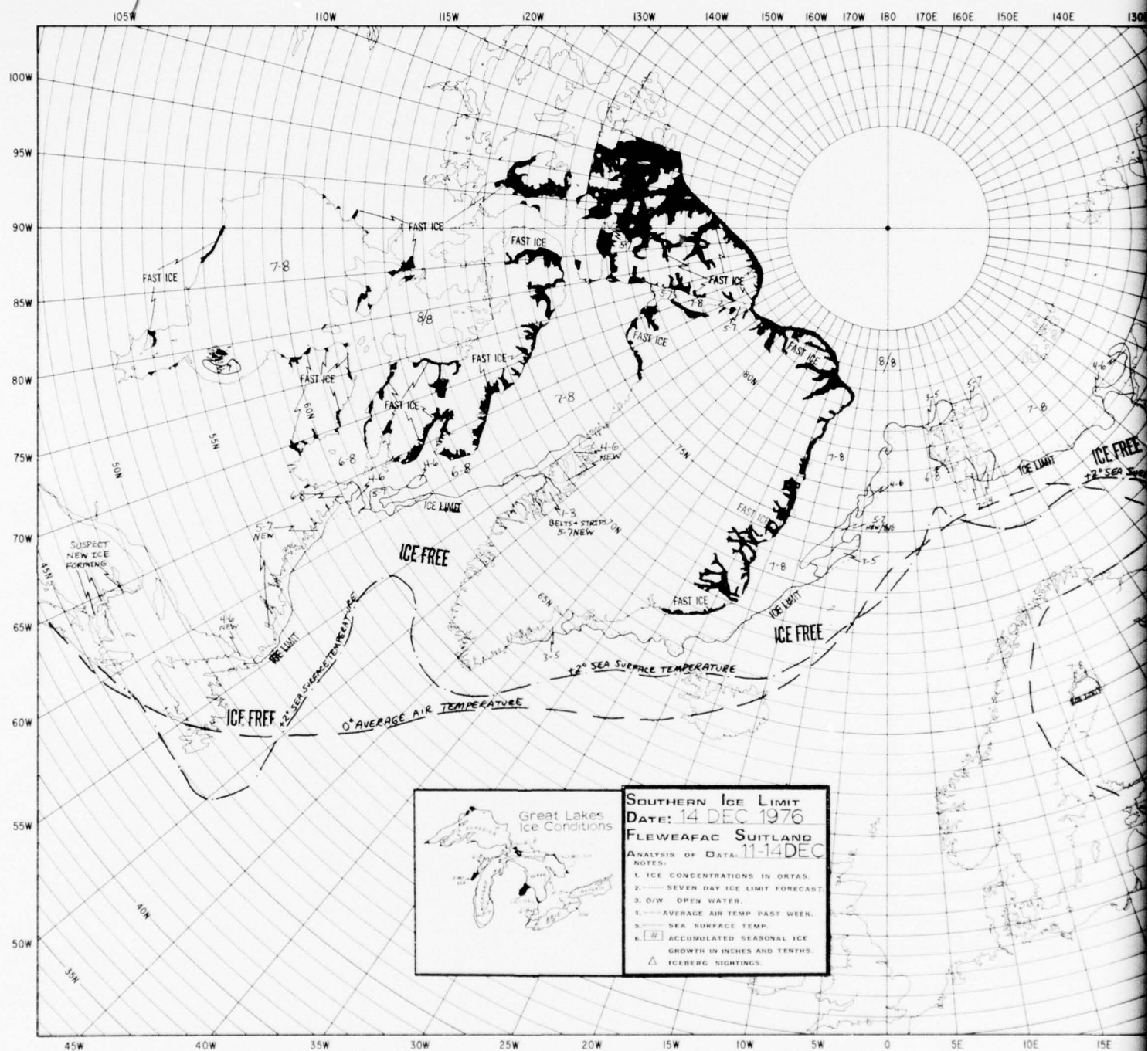
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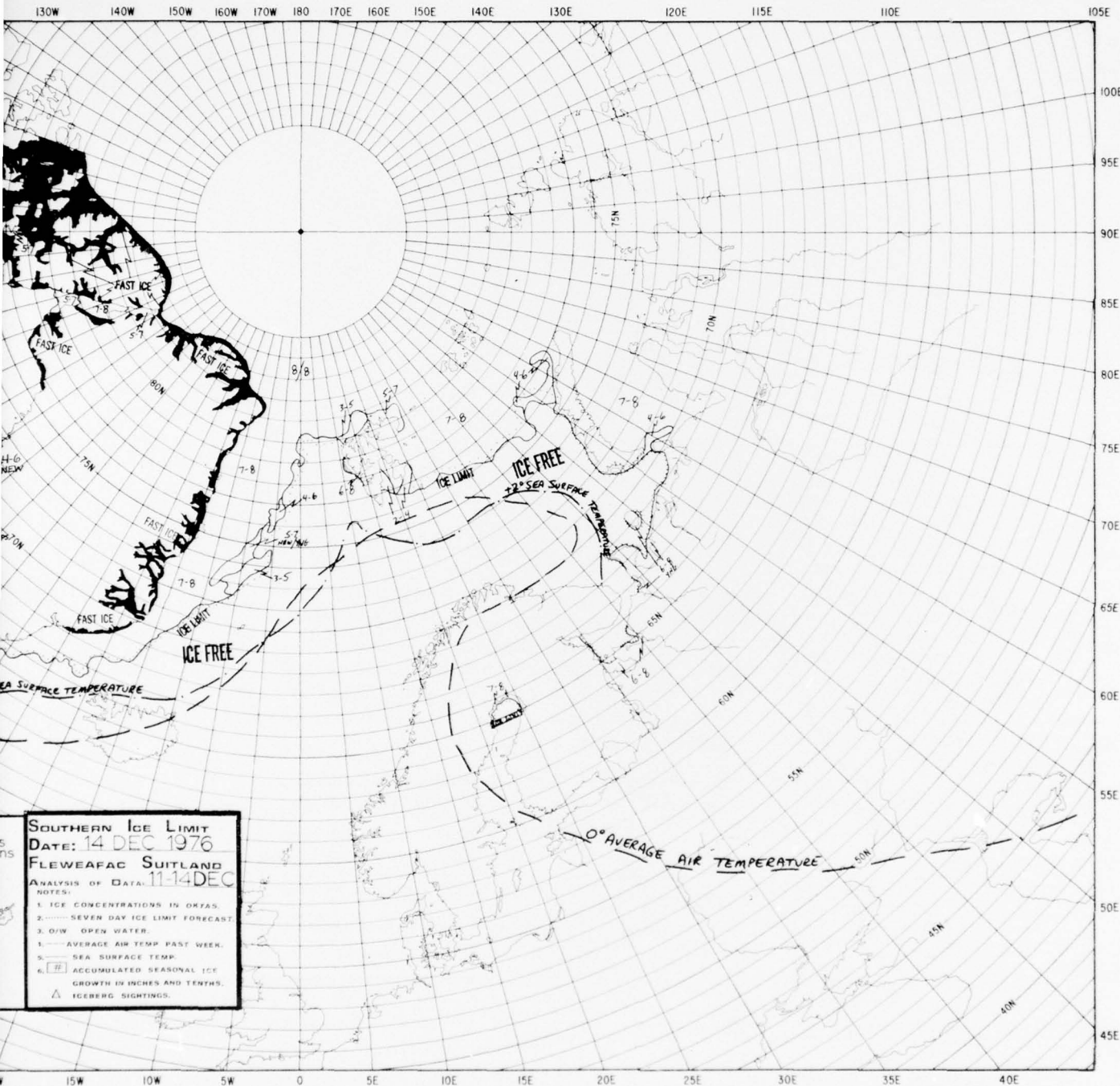
Great Lakes Ice Conditions

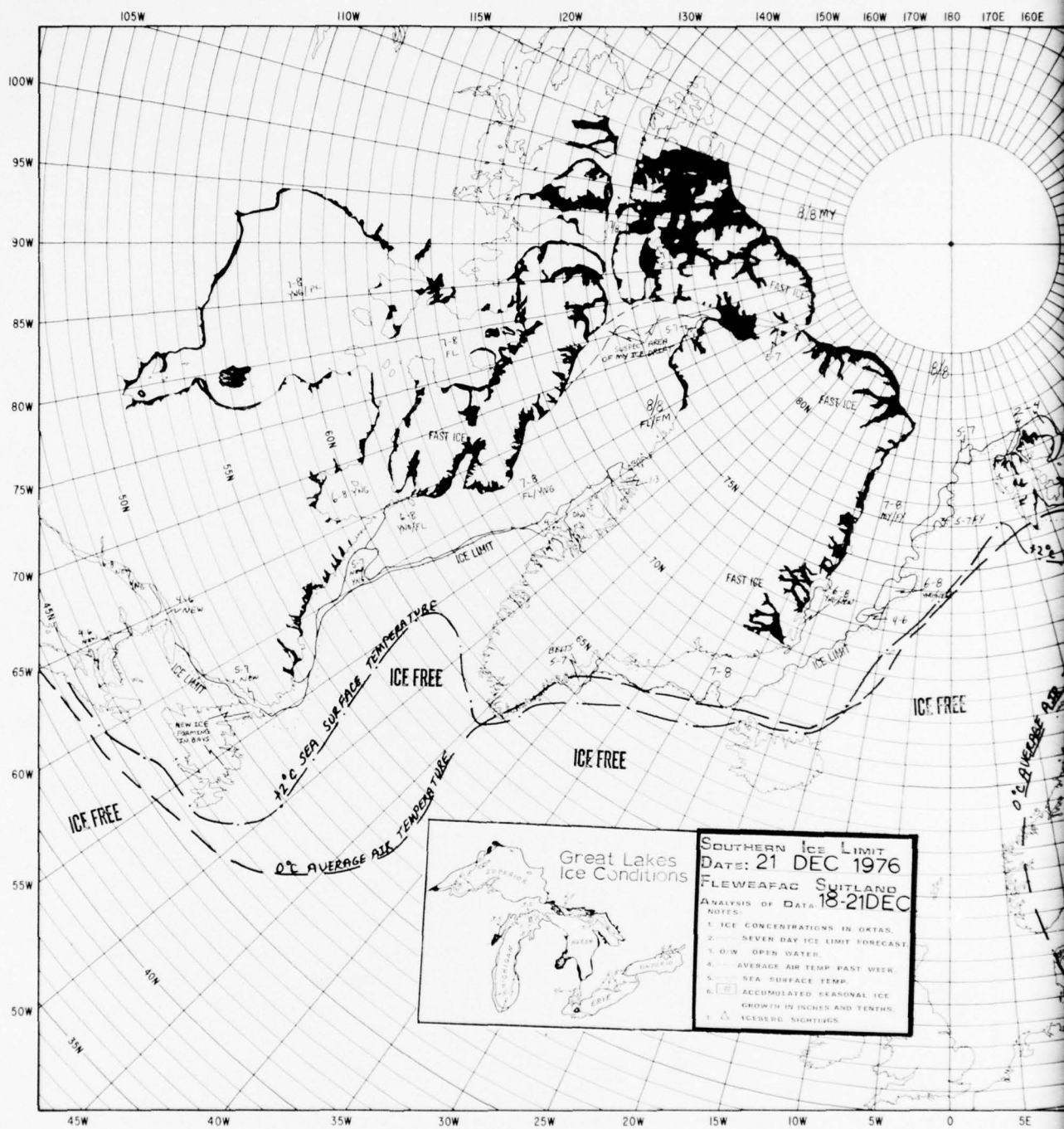
Southern Ice Limit
DATE: 07 DEC 1976
FLEWEAFAC SUITLAND
ANALYSIS OF DATA: 4-07DEC
NOTES:
1. ICE CONCENTRATIONS IN OCTAS.
2. SEVEN DAY ICE LIMIT FORECAST.
3. OIW OPEN WATER.
4. AVERAGE AIR TEMP PAST WEEK.
5. SEA SURFACE TEMP.
6. ACCUMULATED SEASONAL ICE GROWTH IN INCHES AND TENTHS.
△ ICEBERG SIGHTINGS.



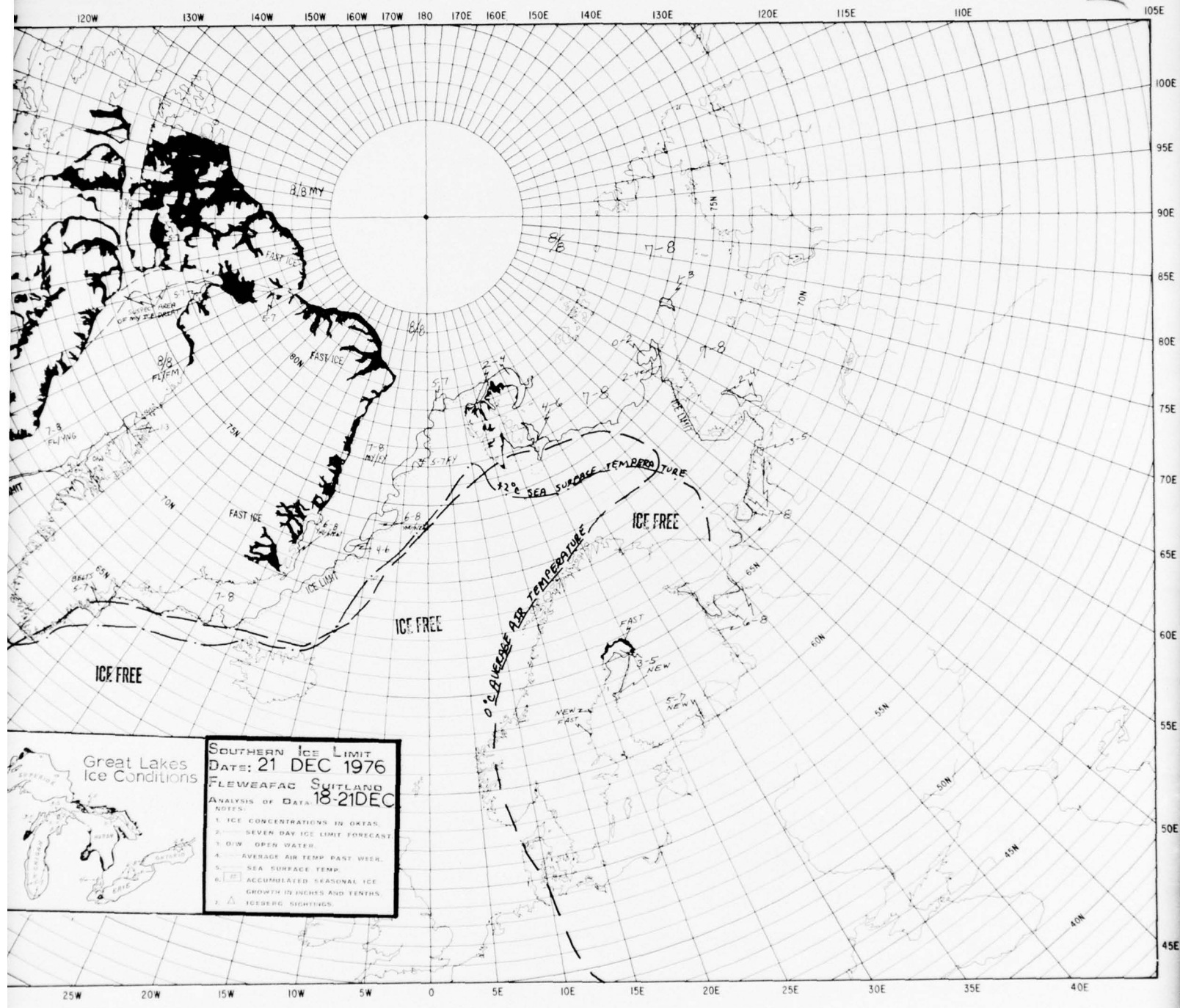


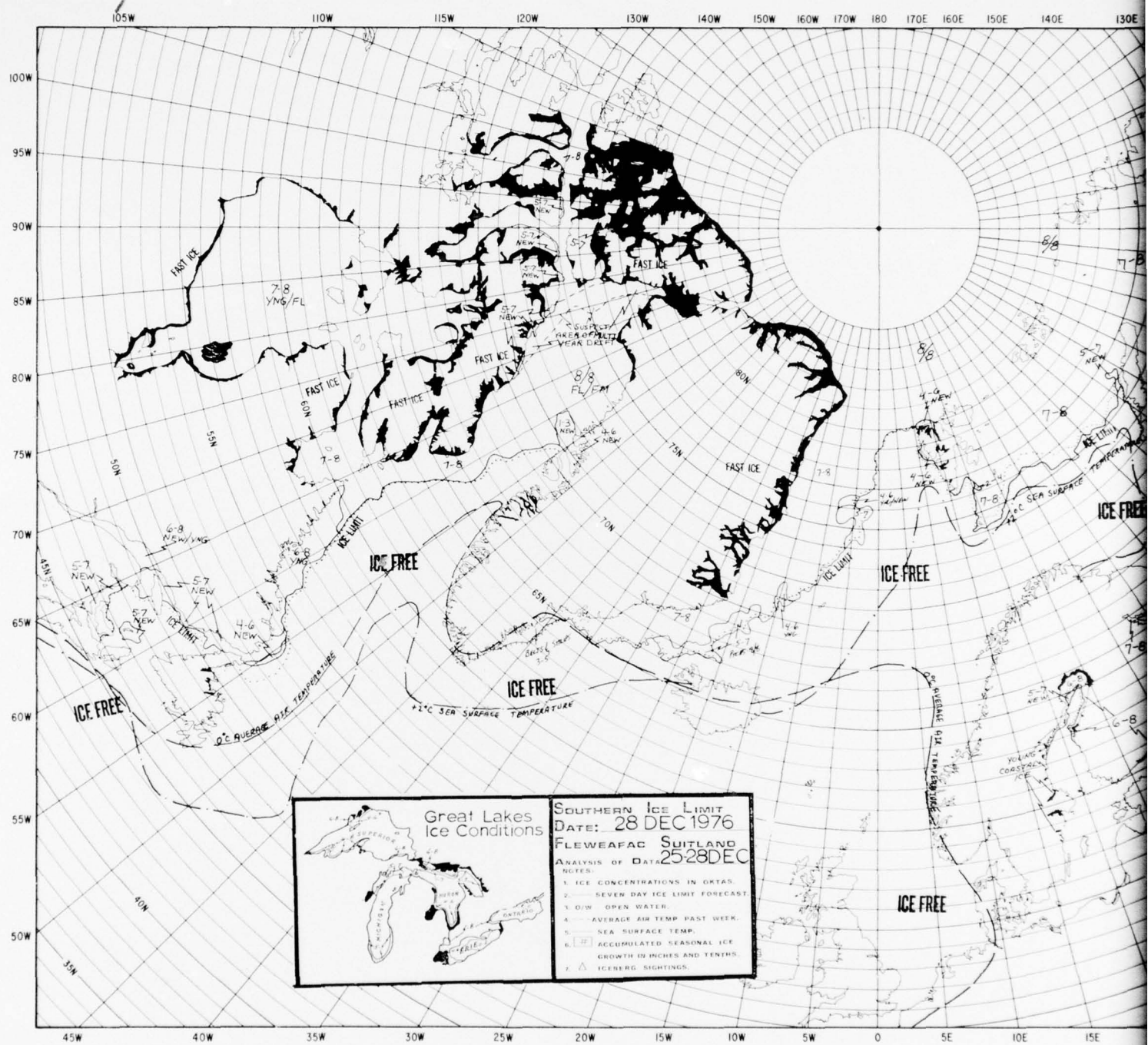
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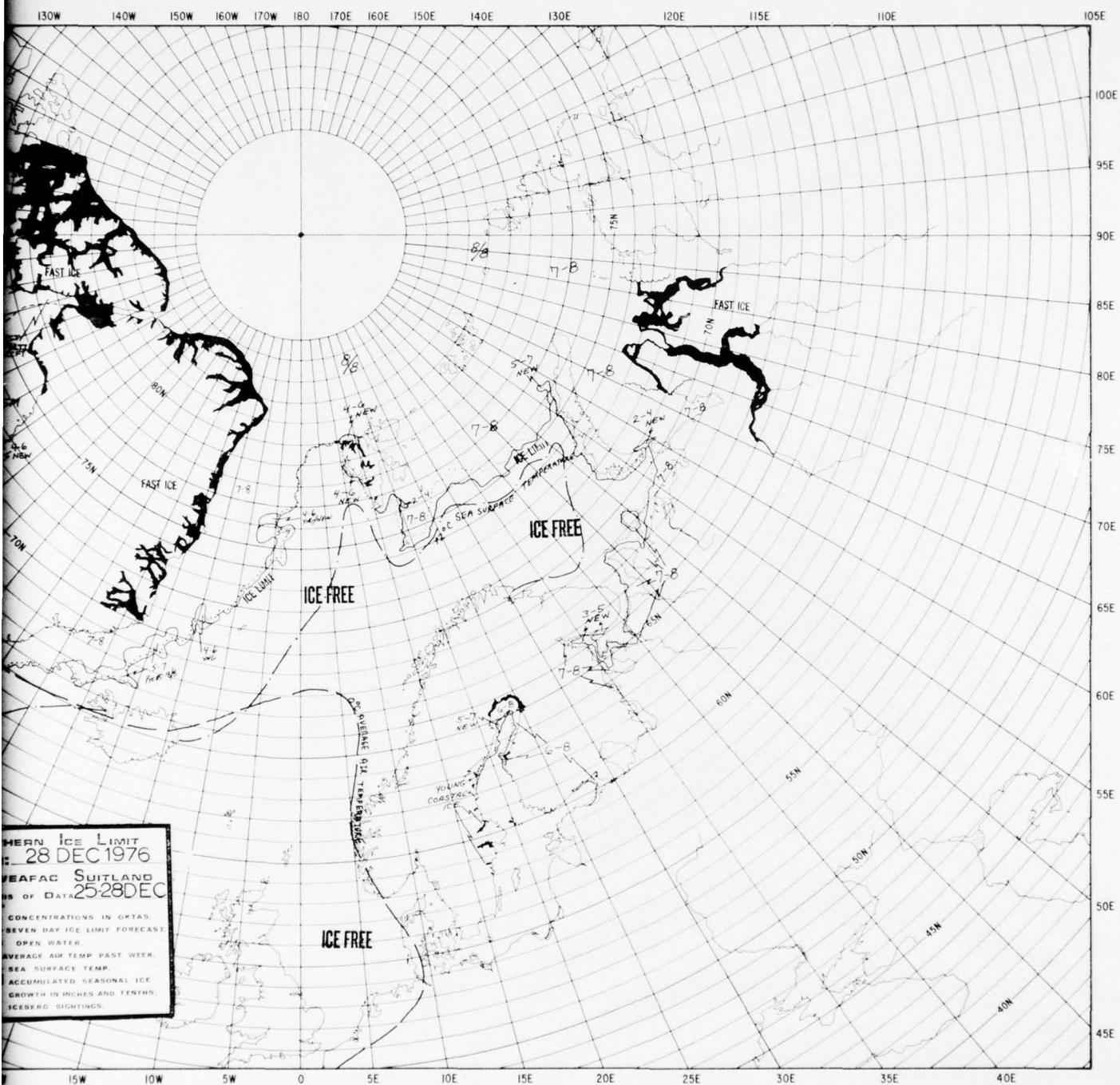


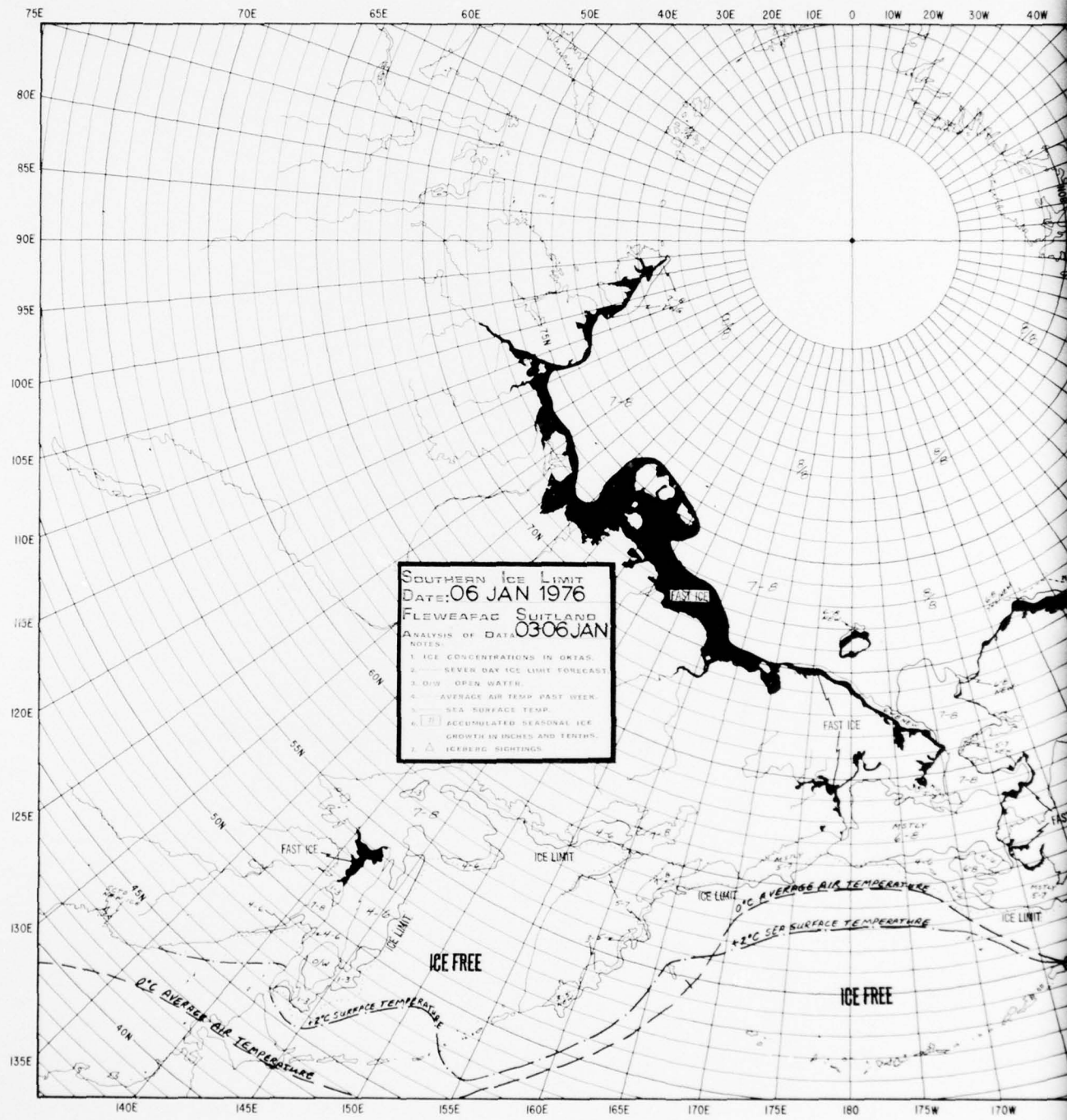


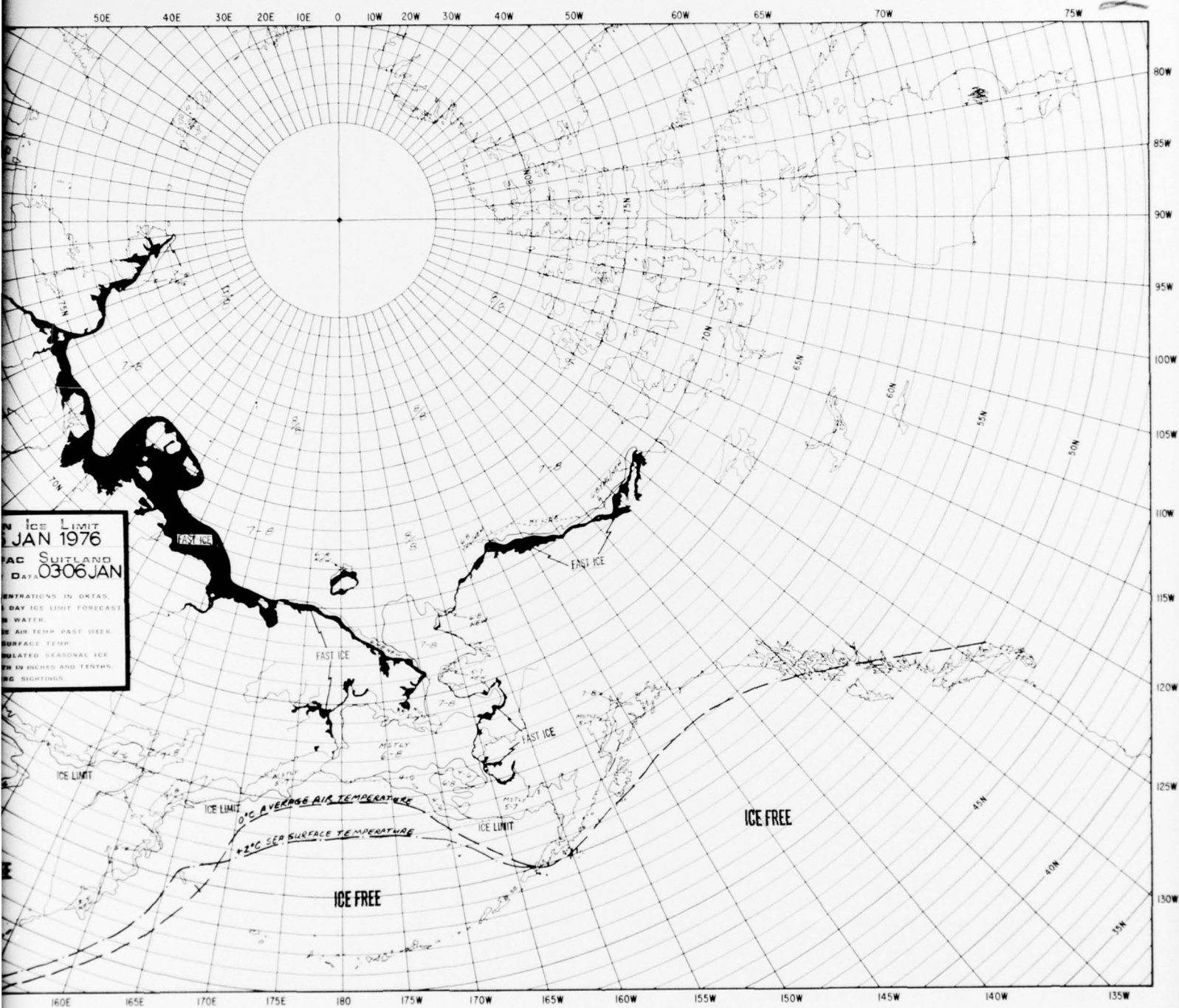
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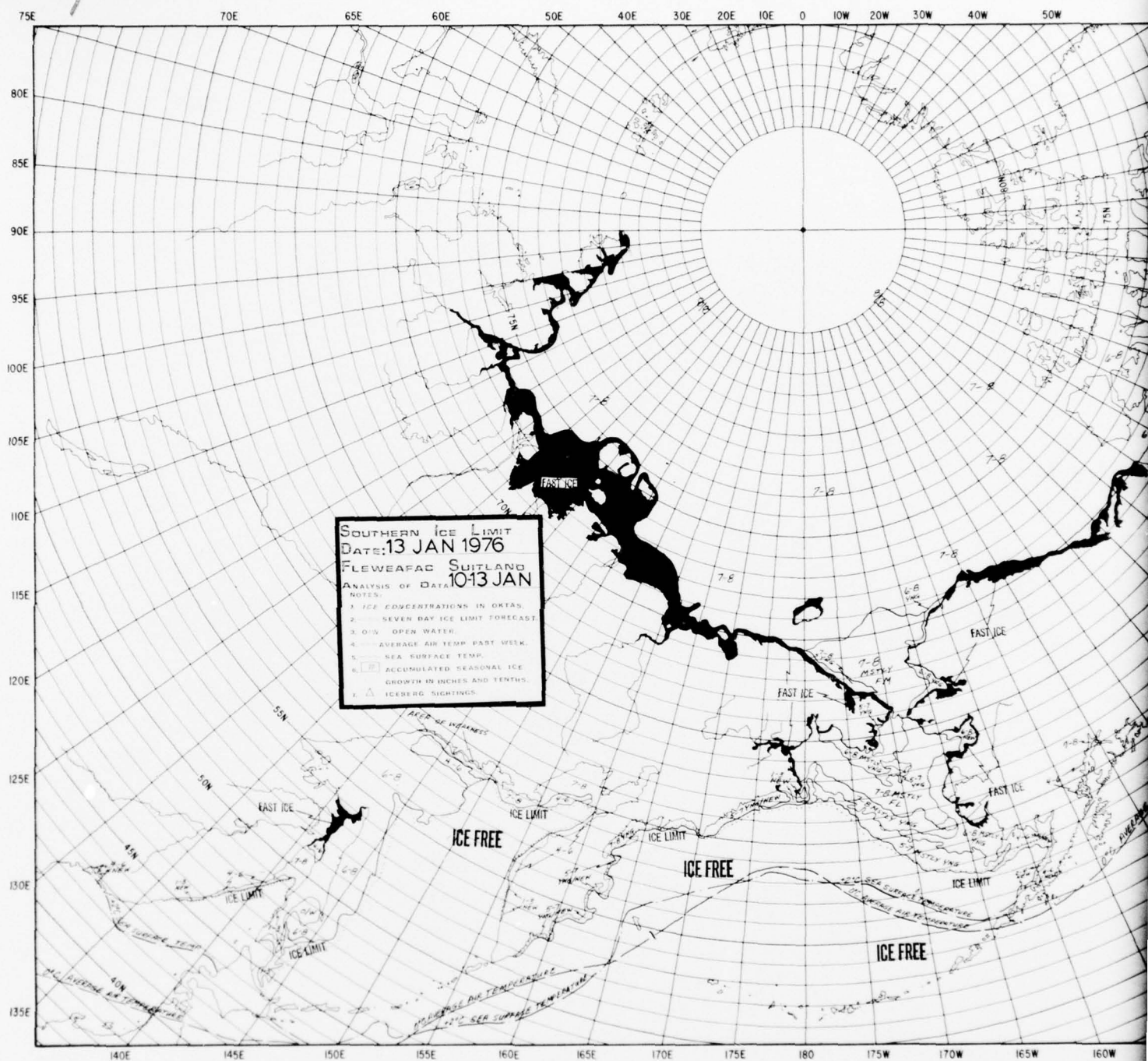


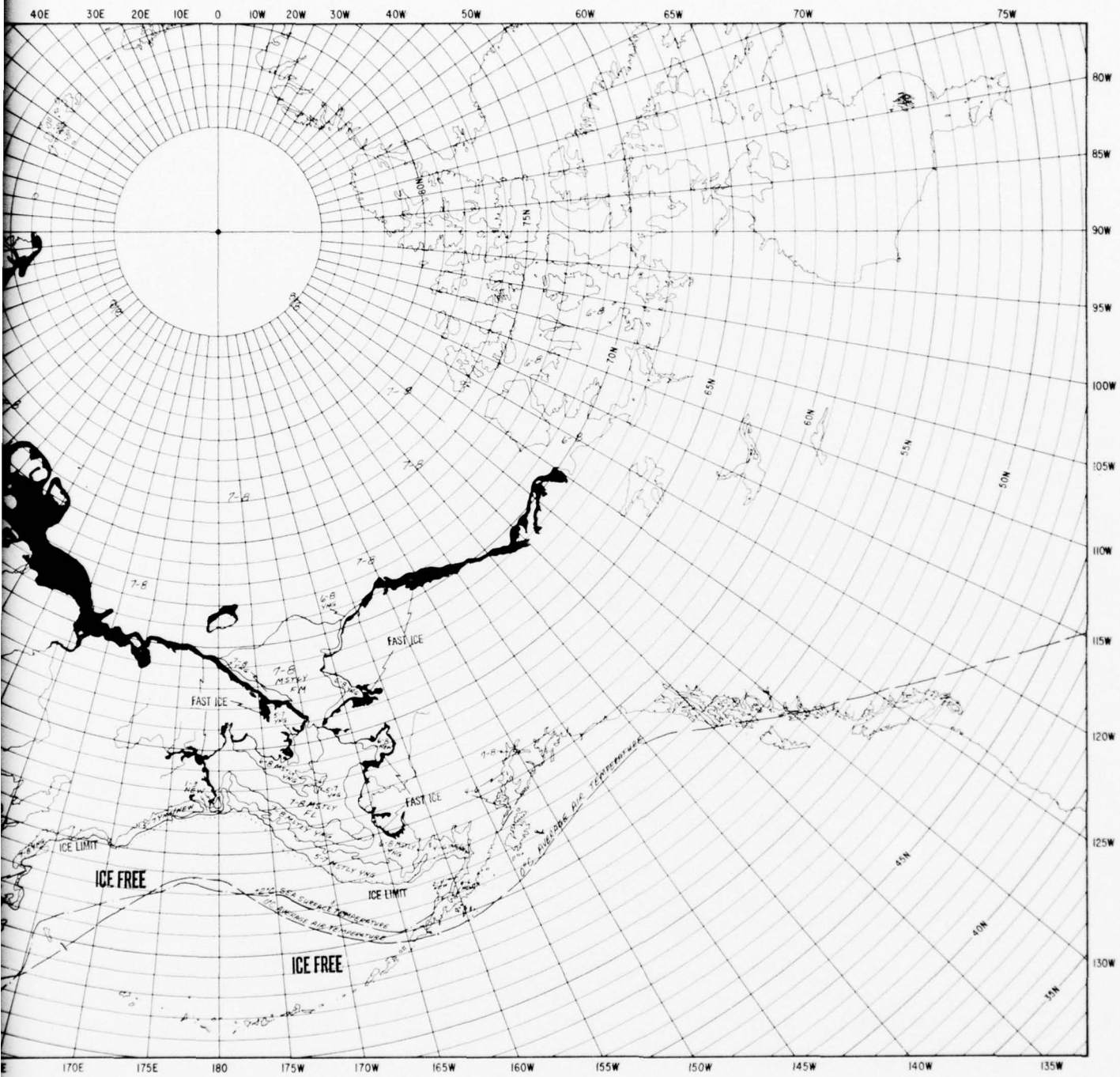


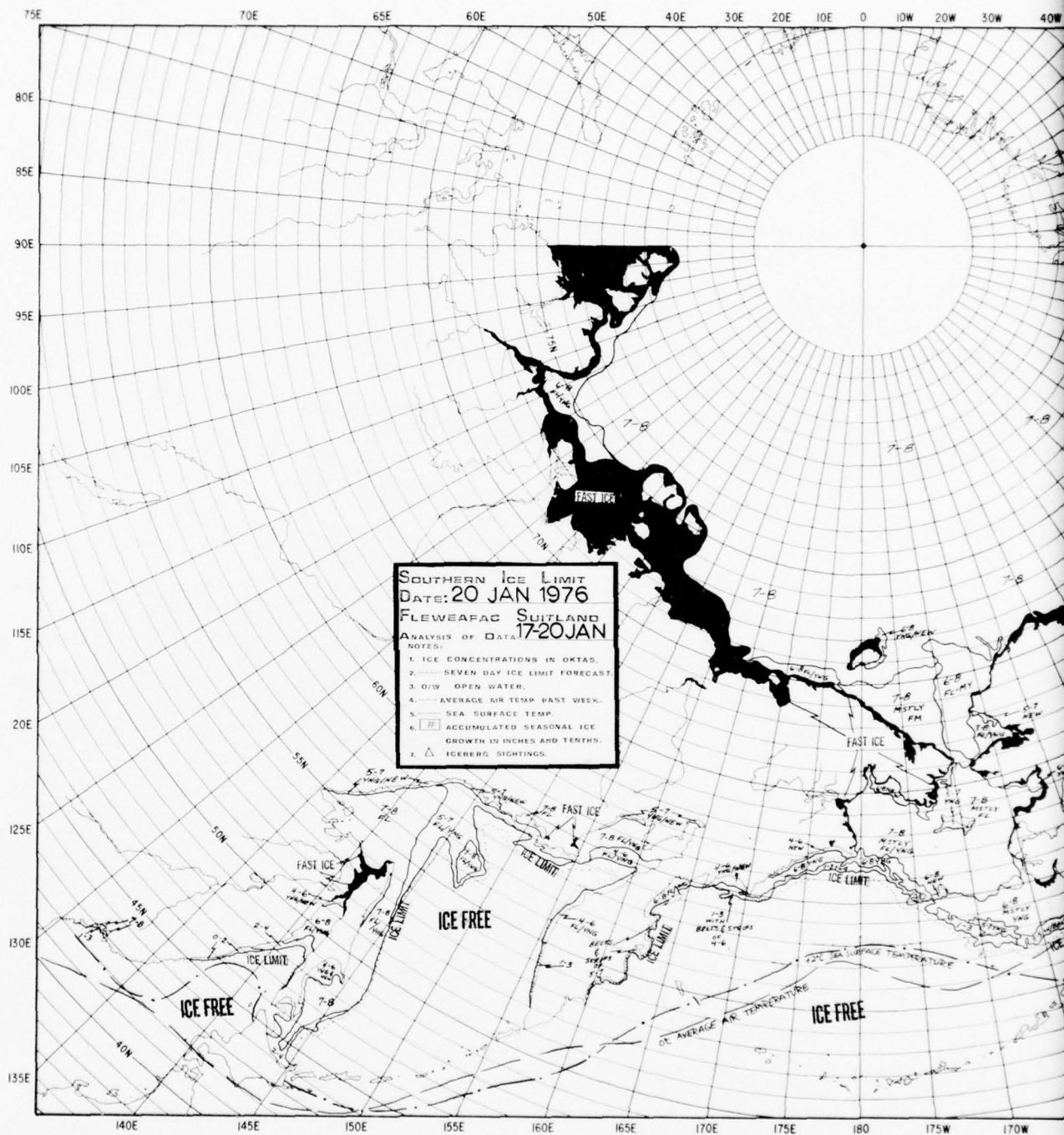


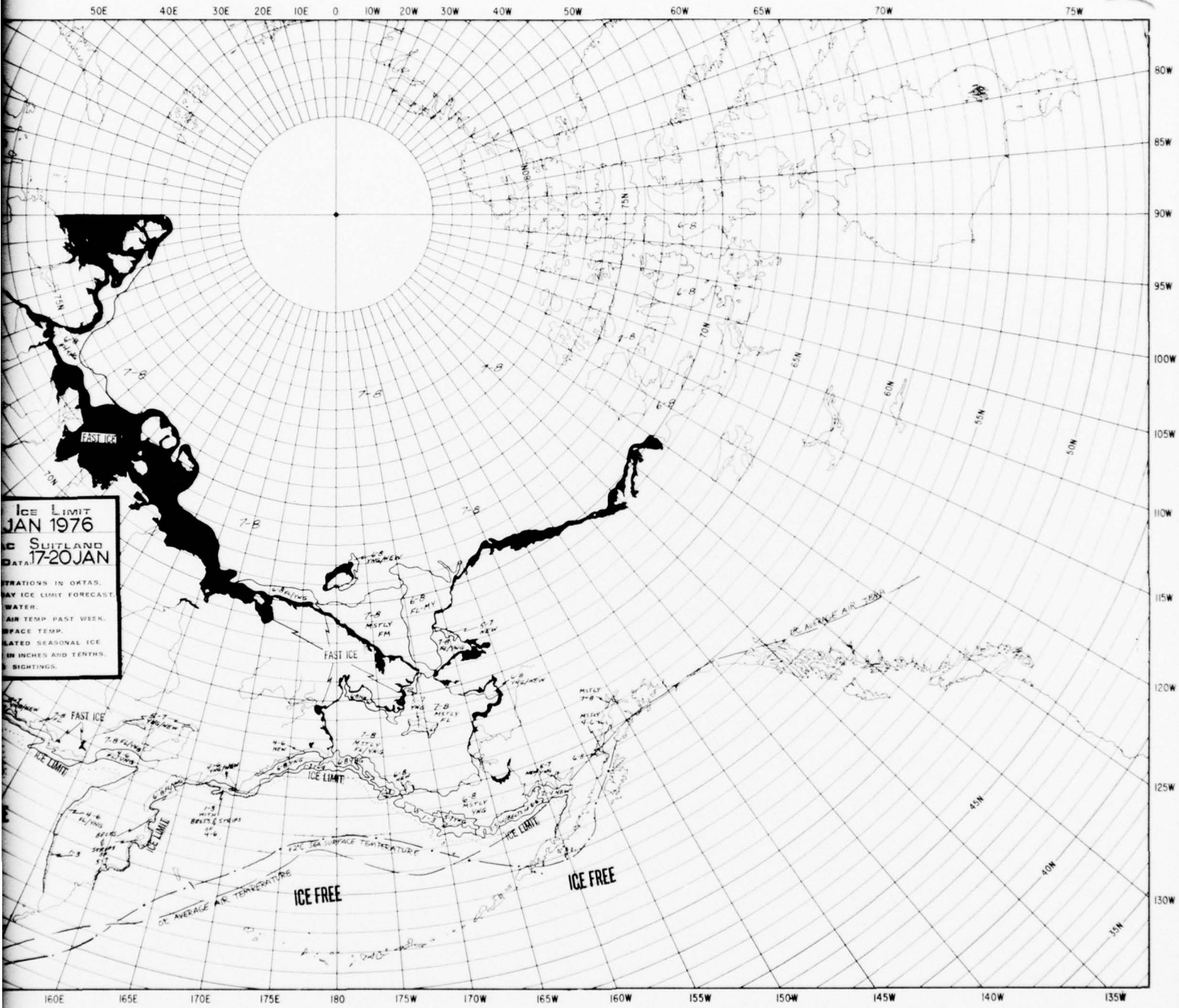


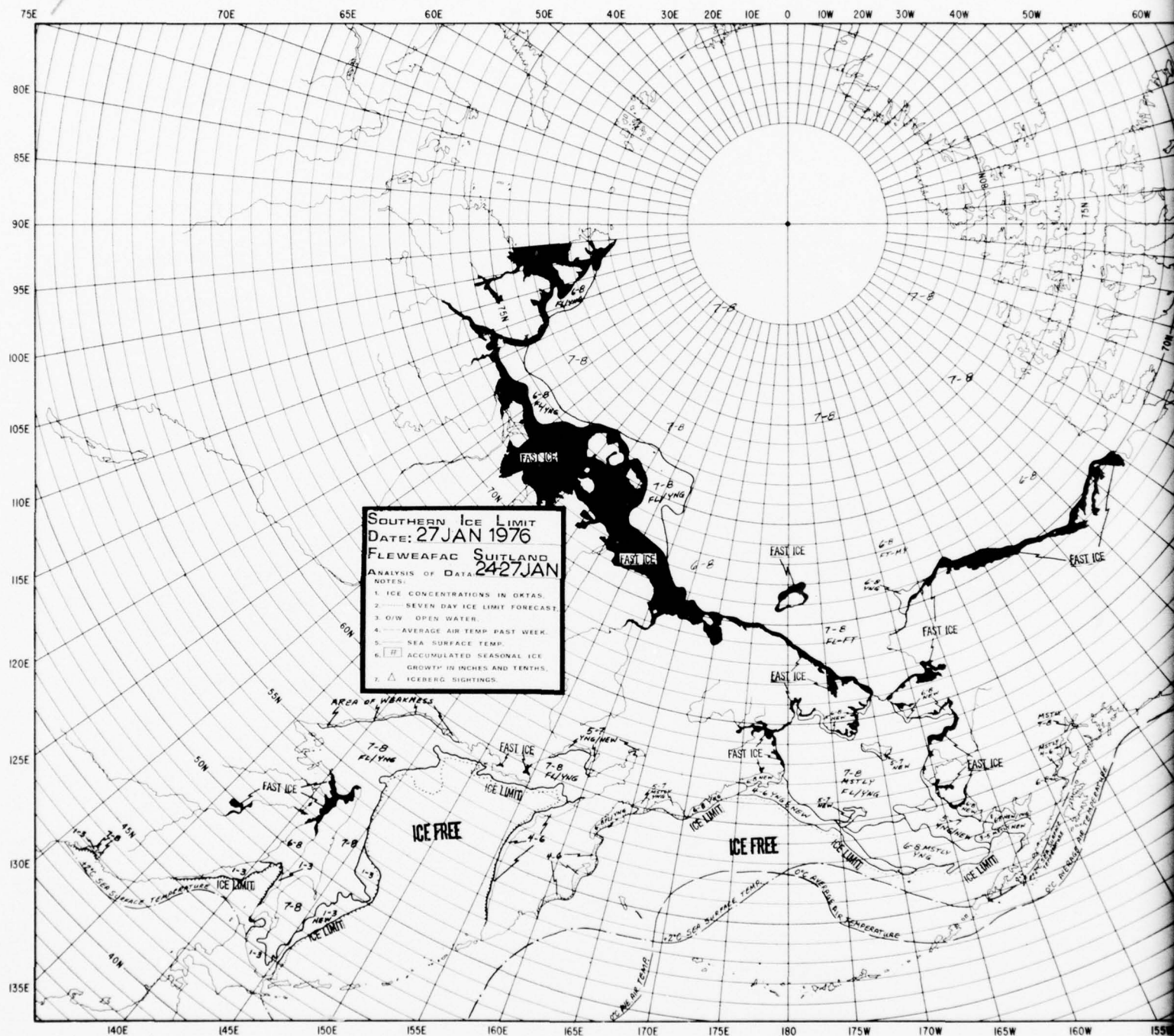


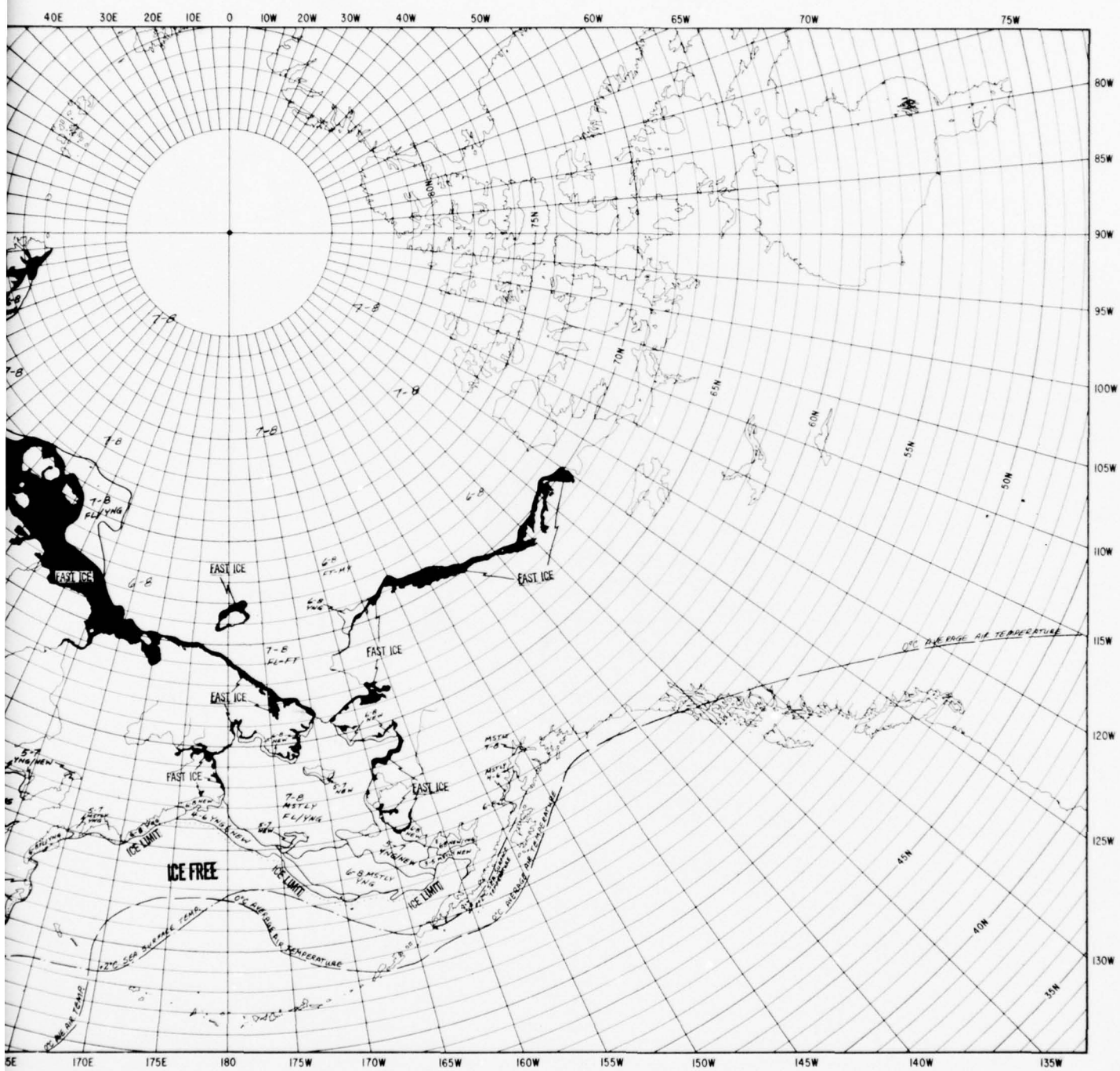


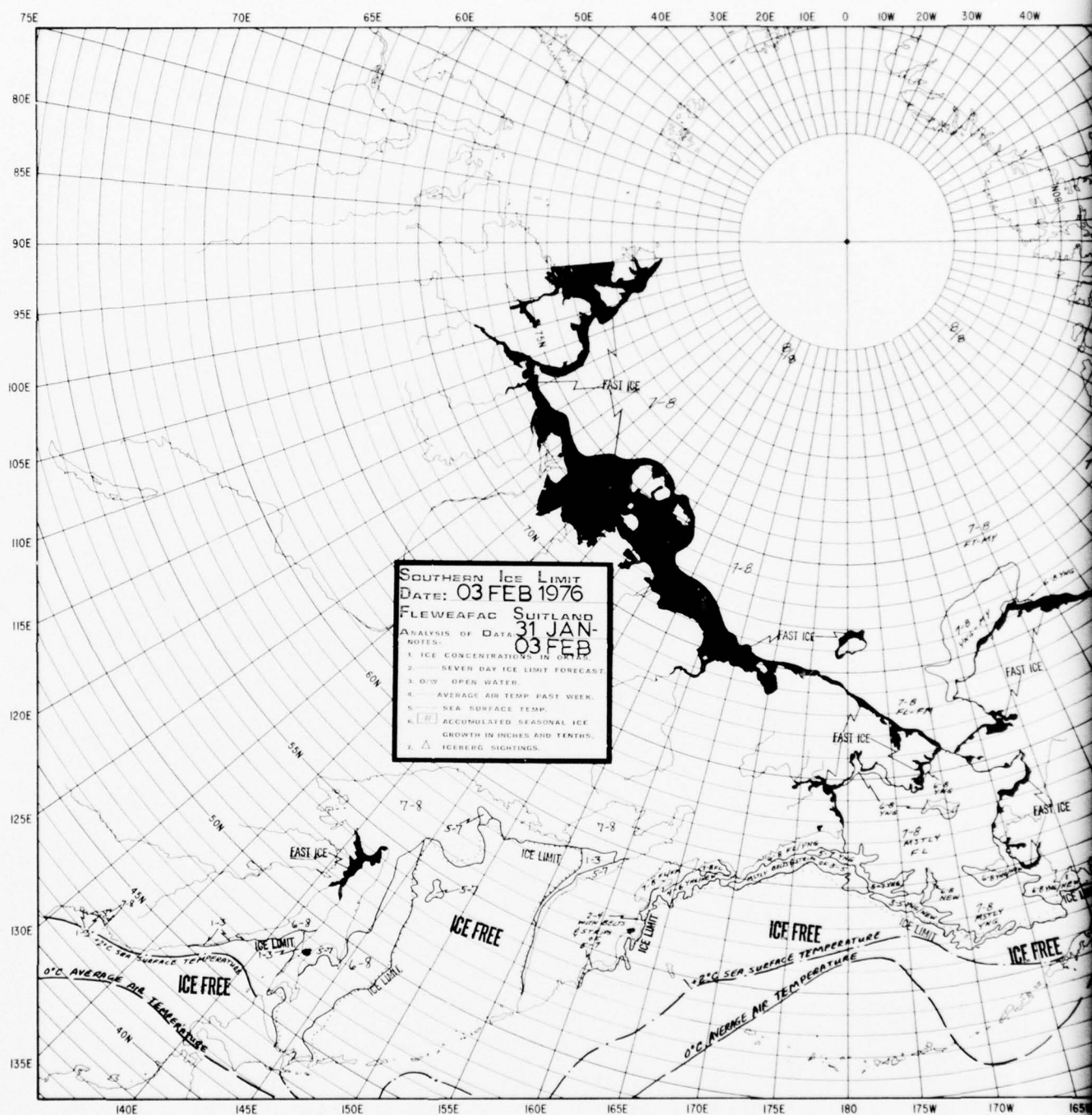


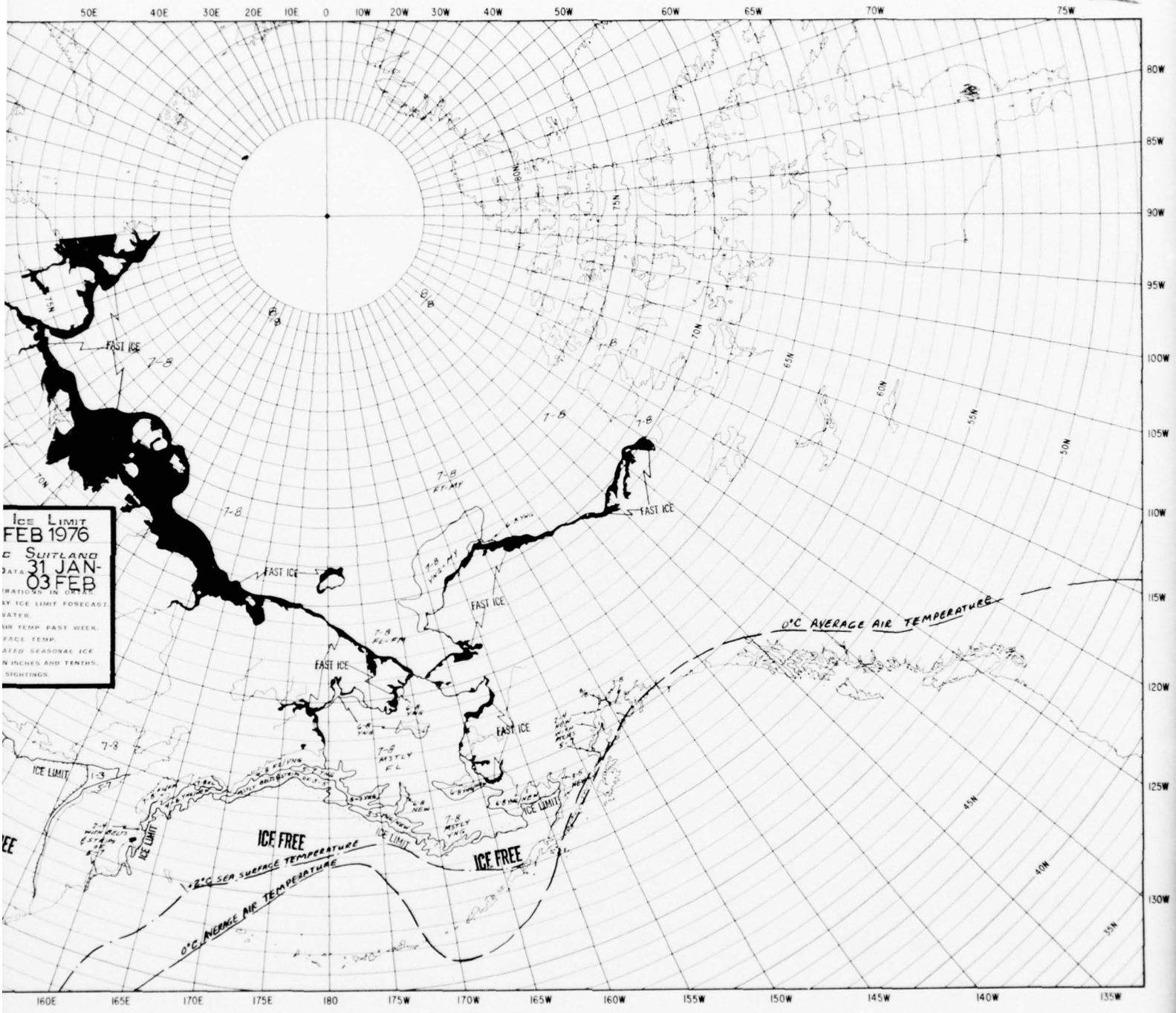




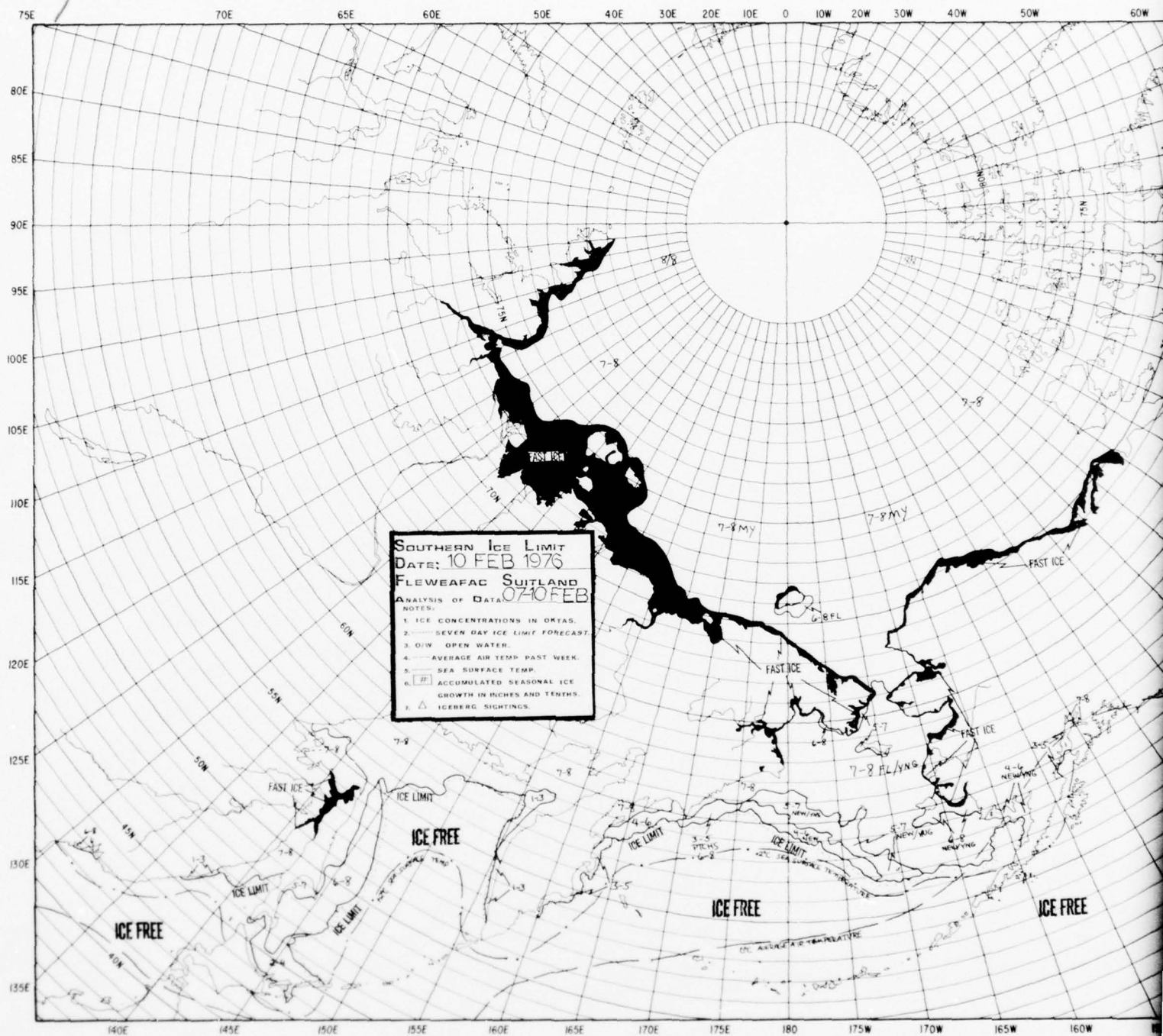


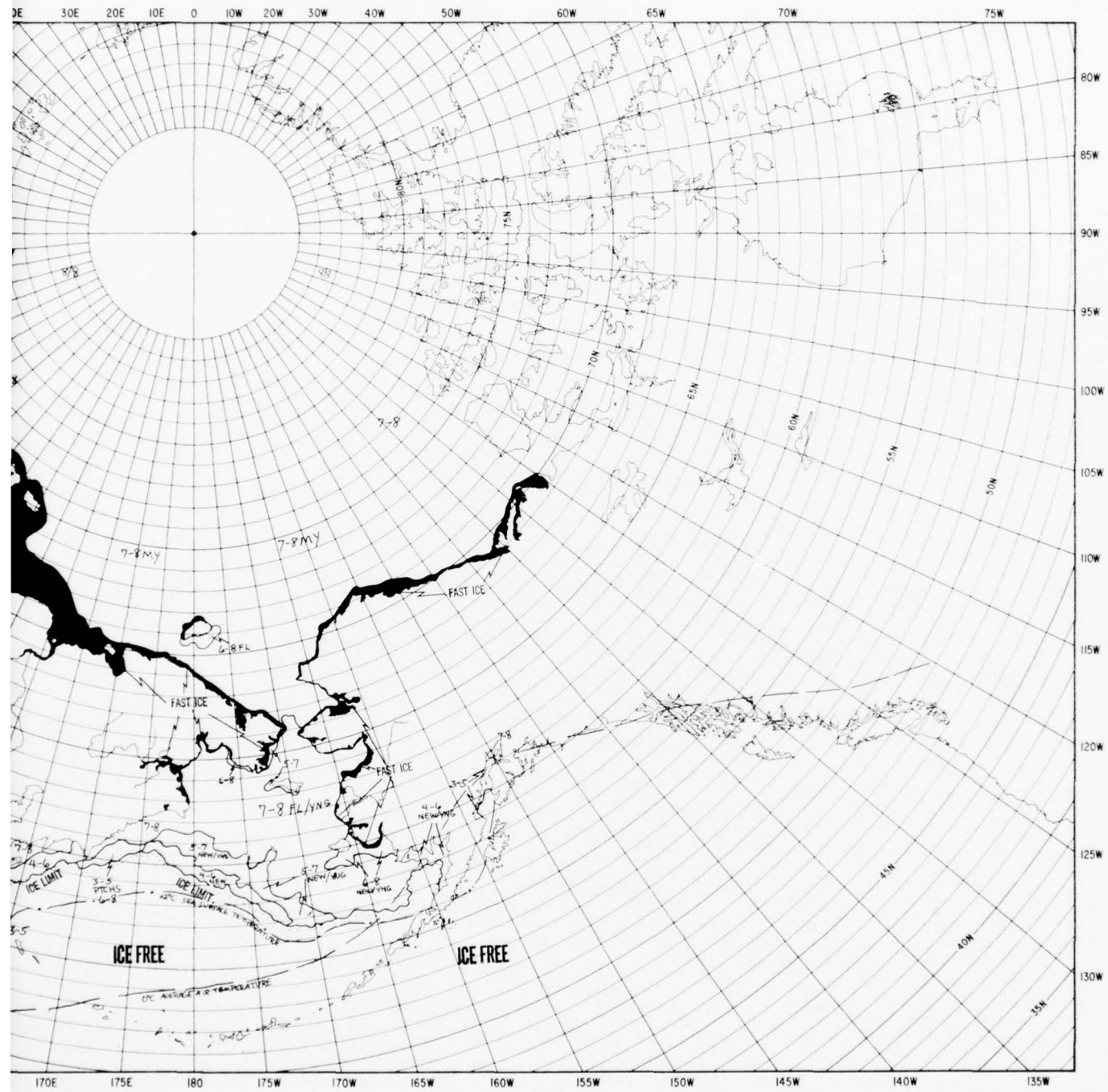


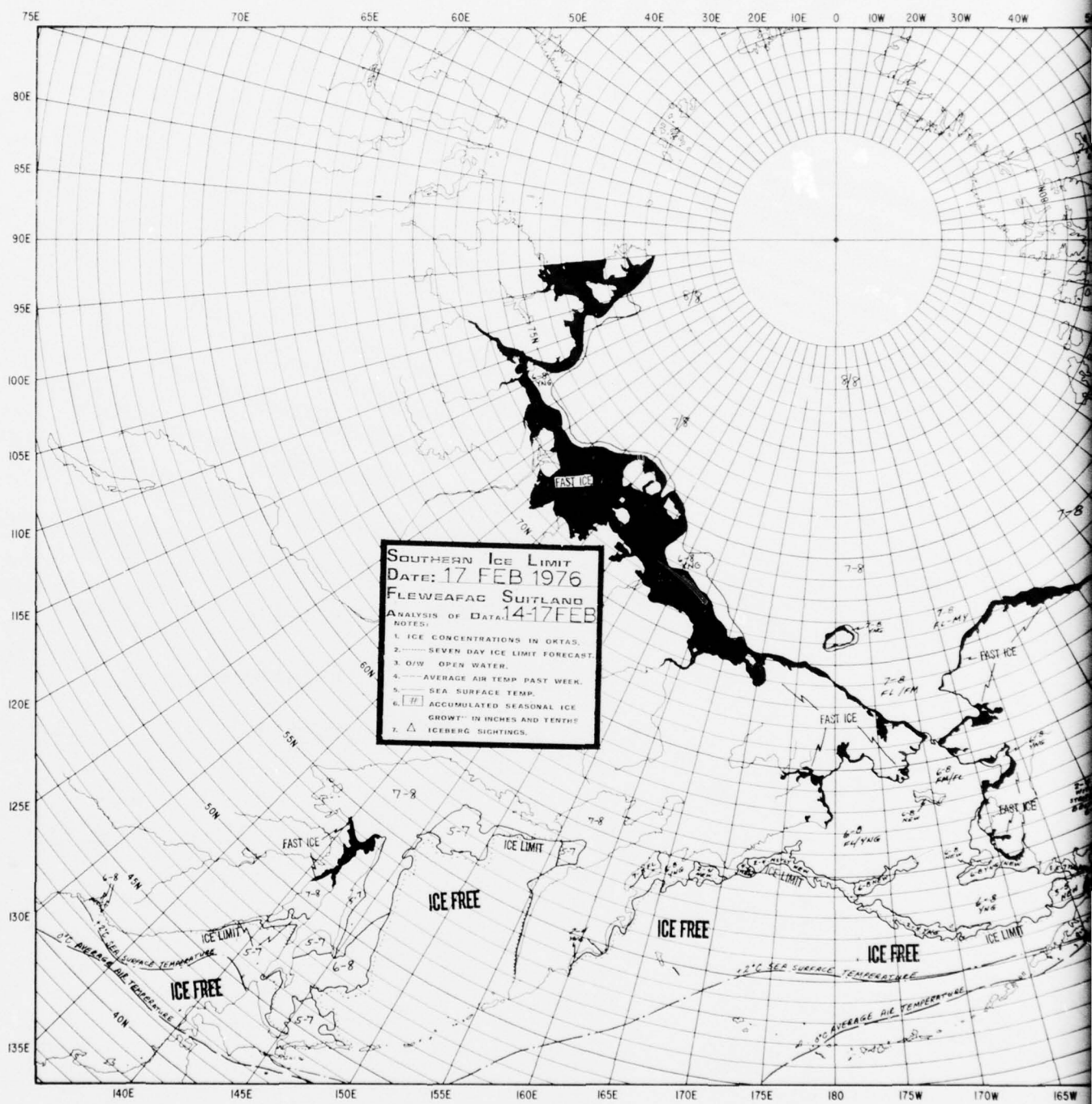


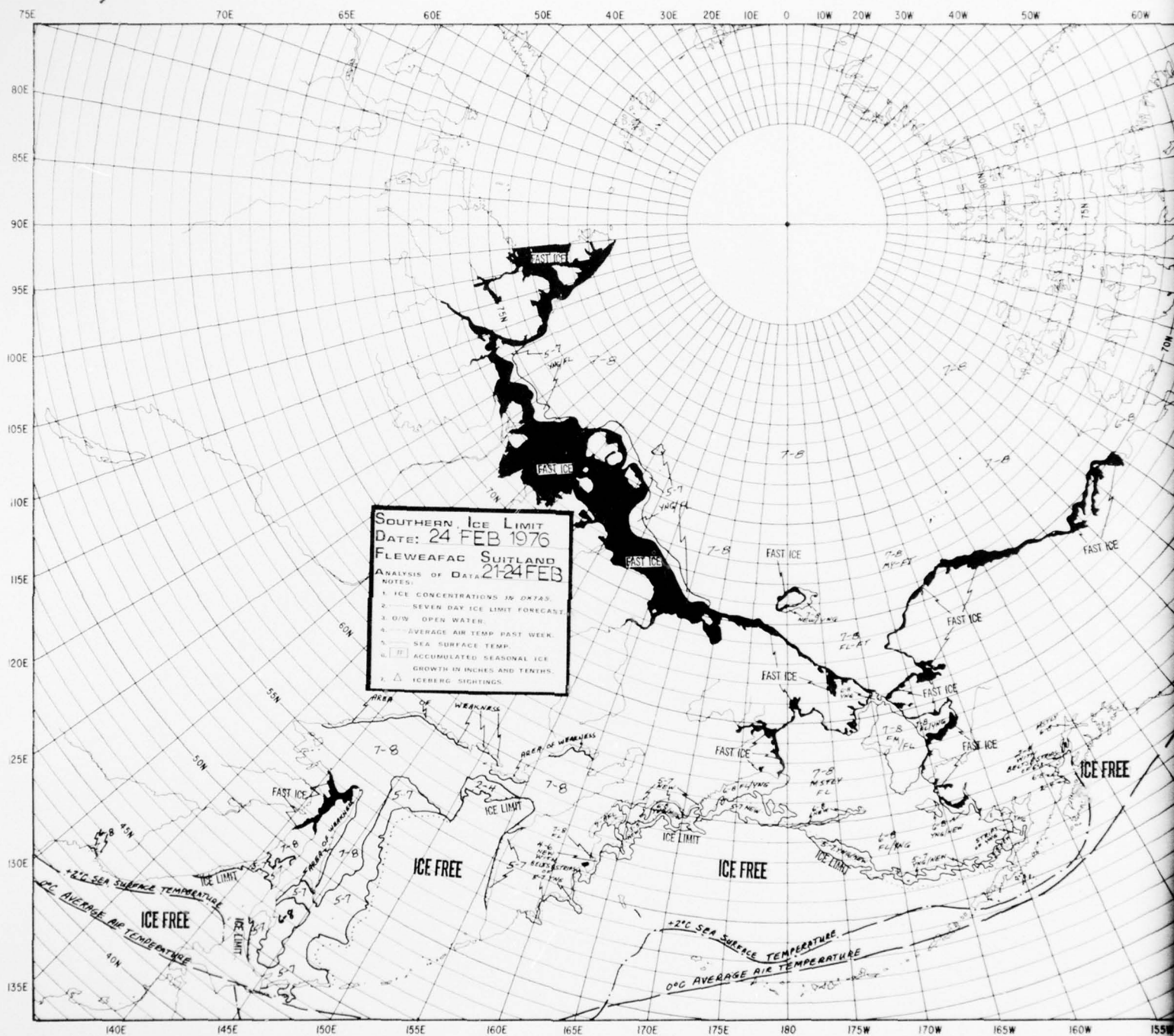


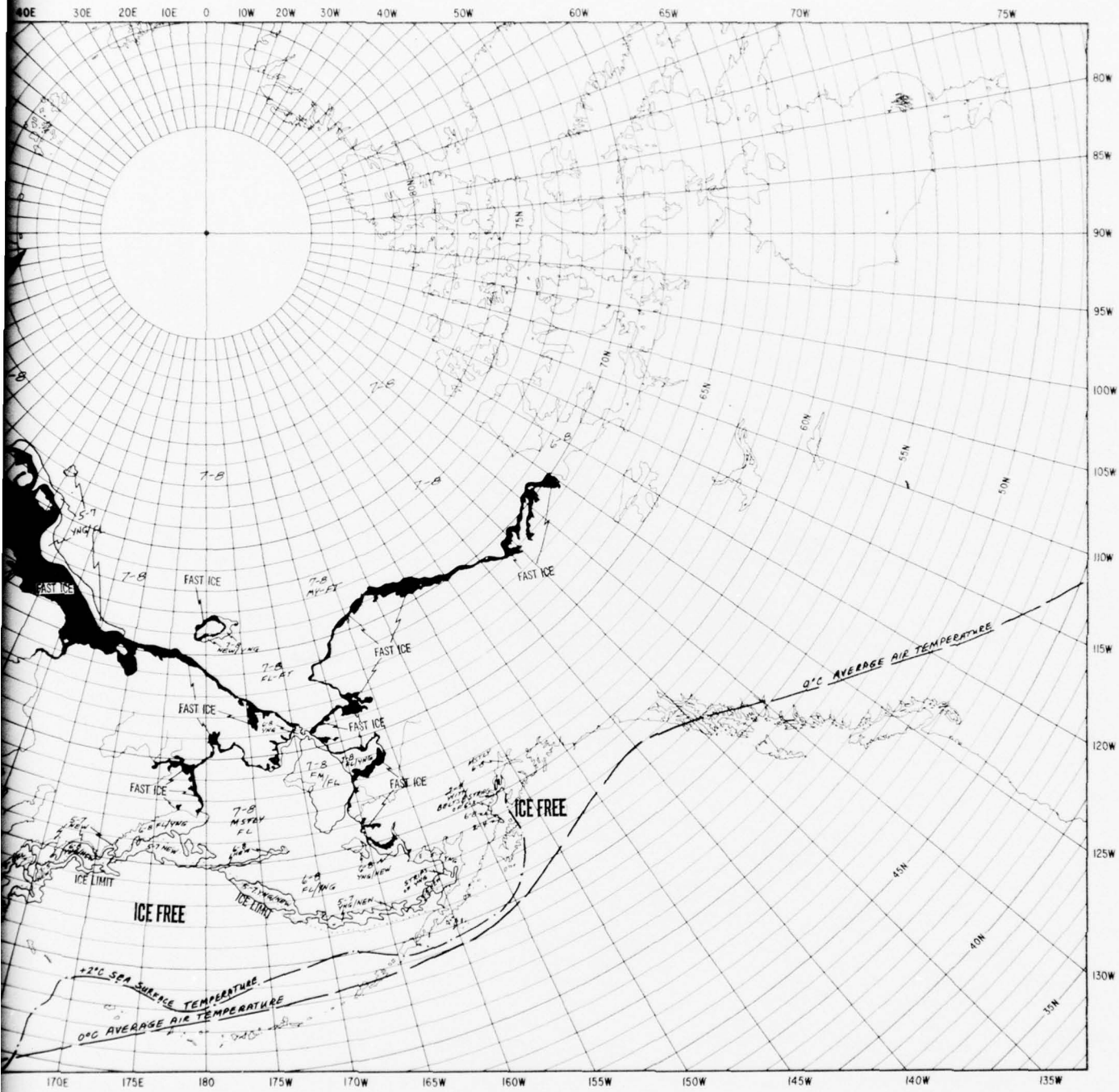
ICE LIMIT
FEB 1976
SUITLAND
31 JAN-
03 FEB
IRATIONS IN OCEAN
BY ICE LIMIT FORECAST
VATER
W TEMP PAST WEEK
FACE TEMP
ATED SEASONAL ICE
N INCHES AND TENTHS
SIGHTINGS

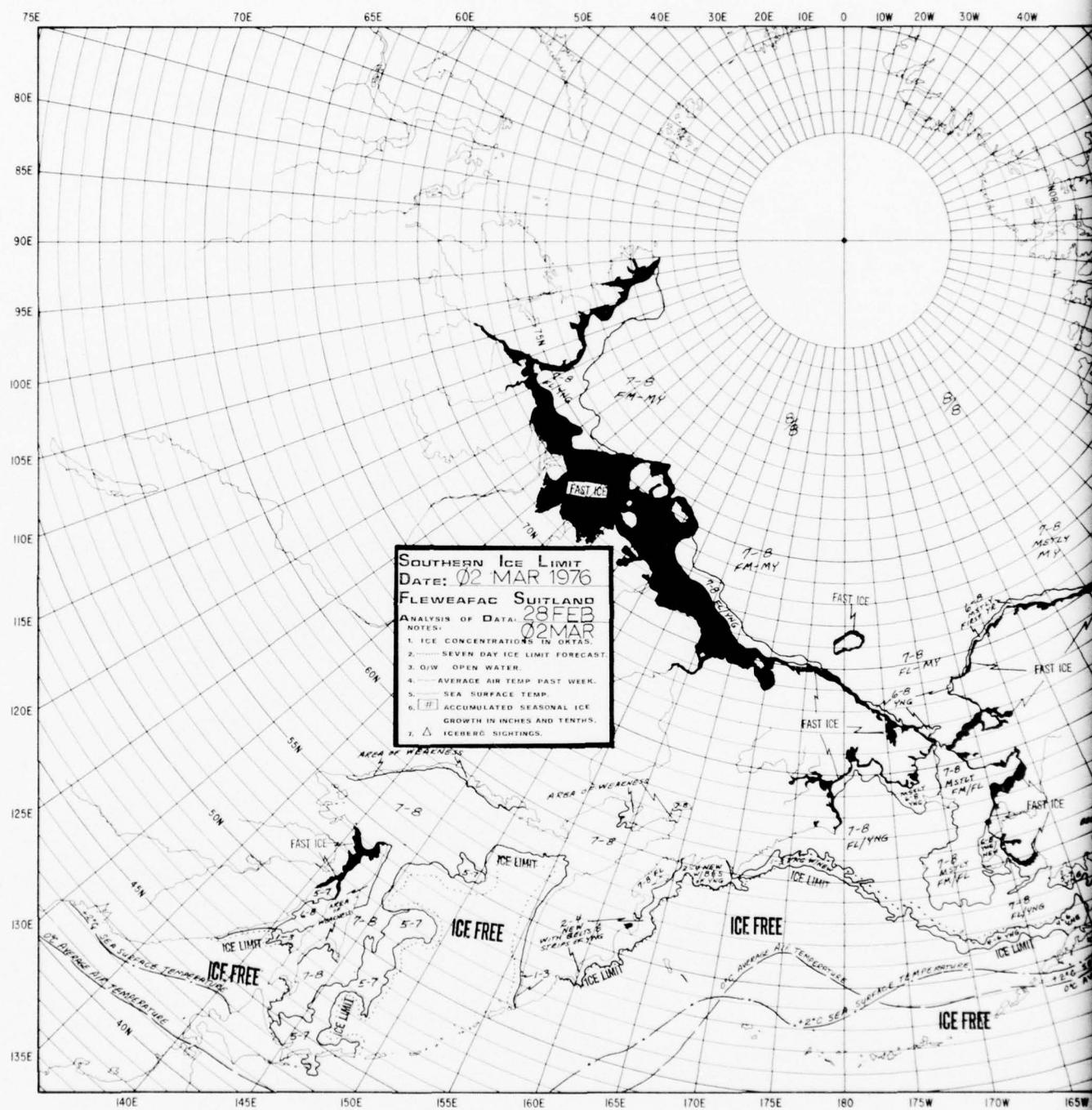


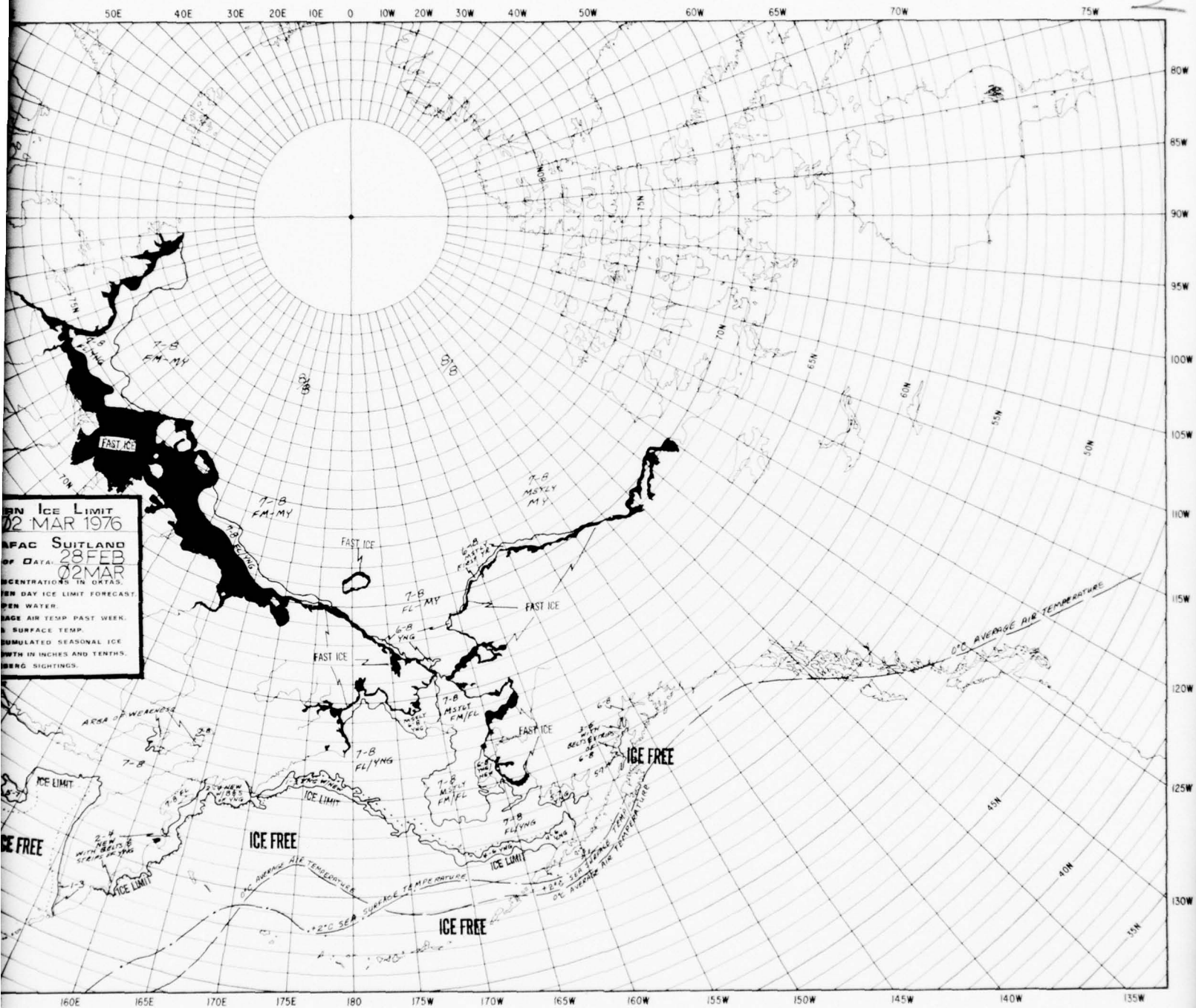


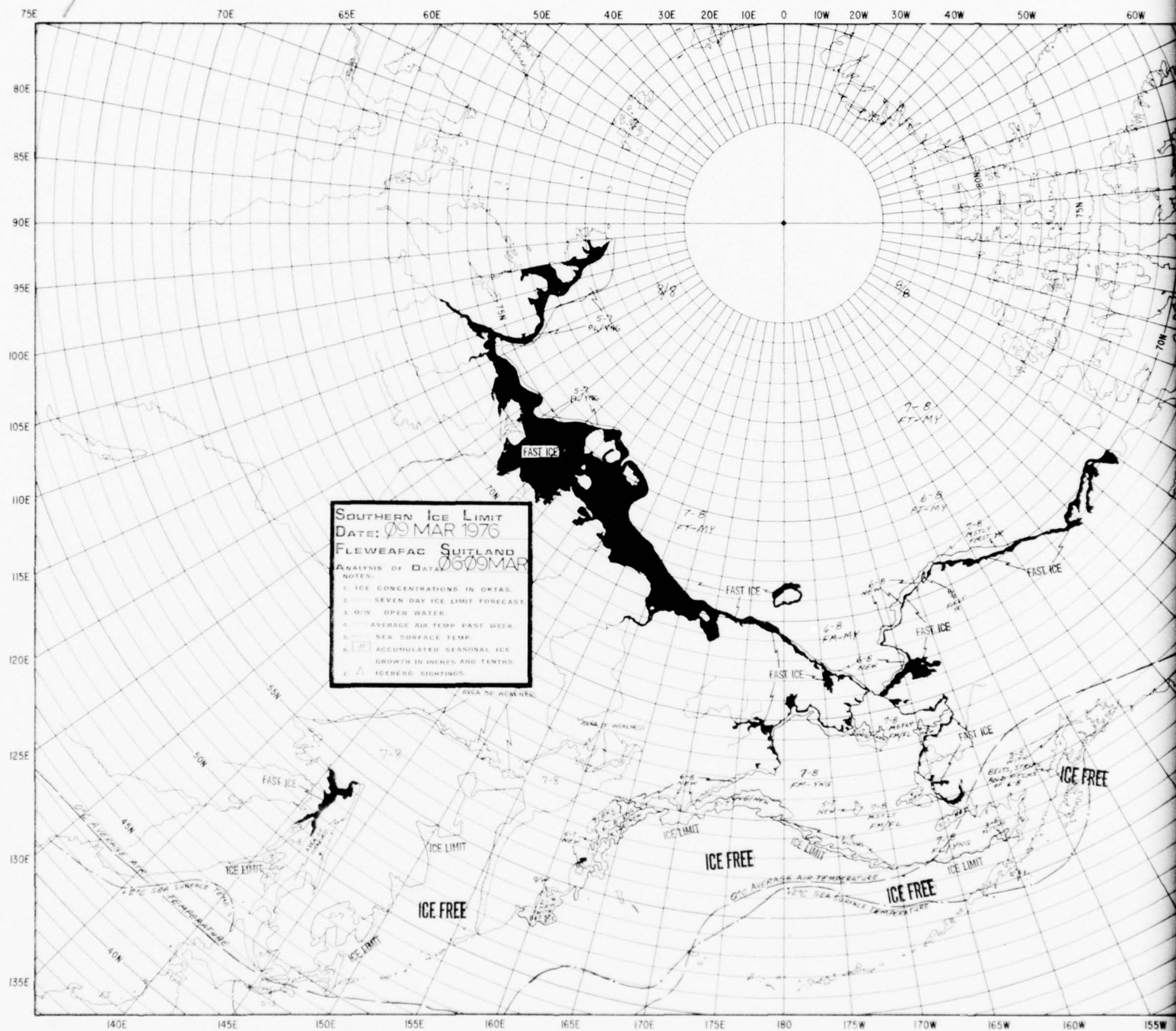


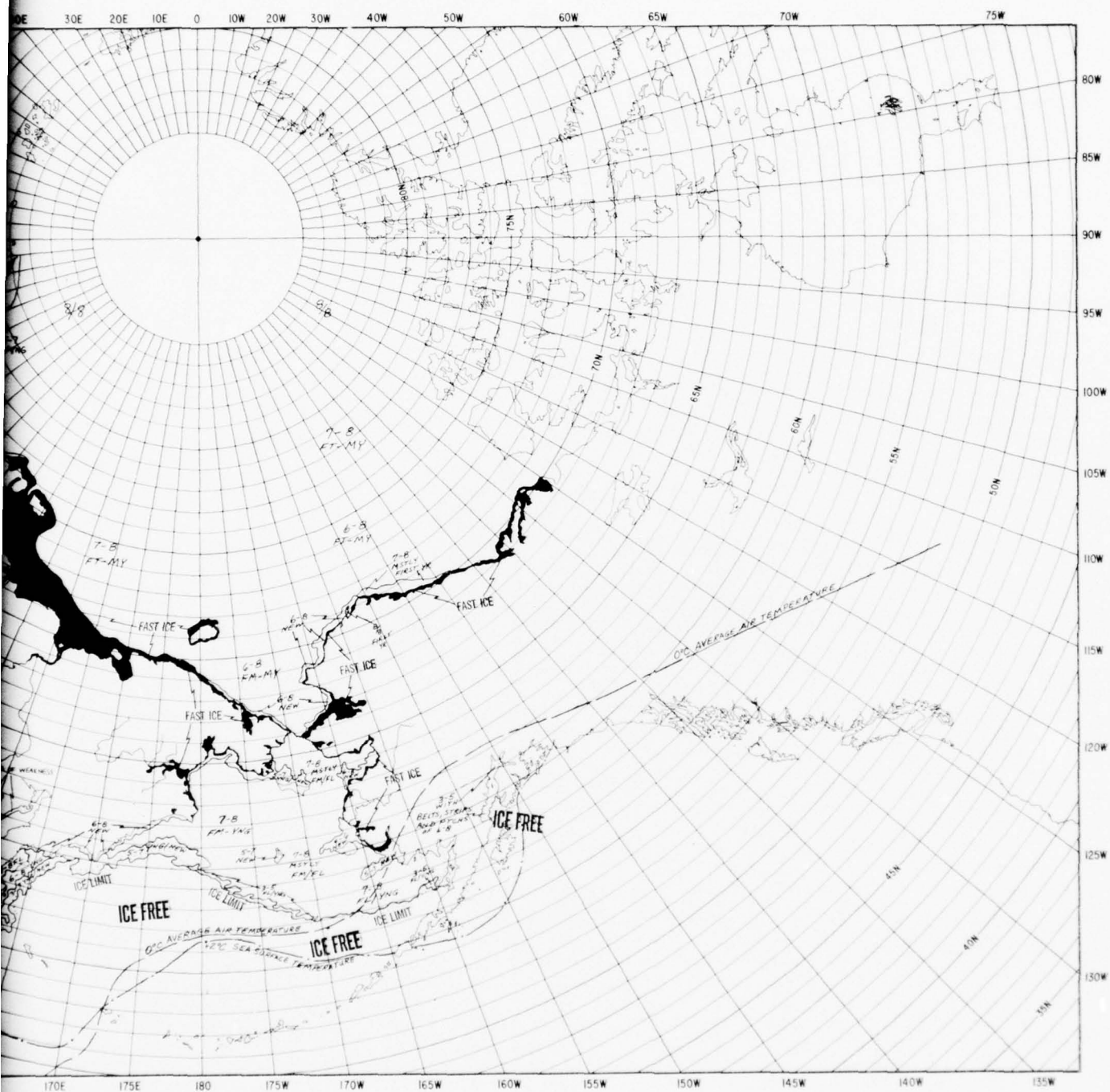


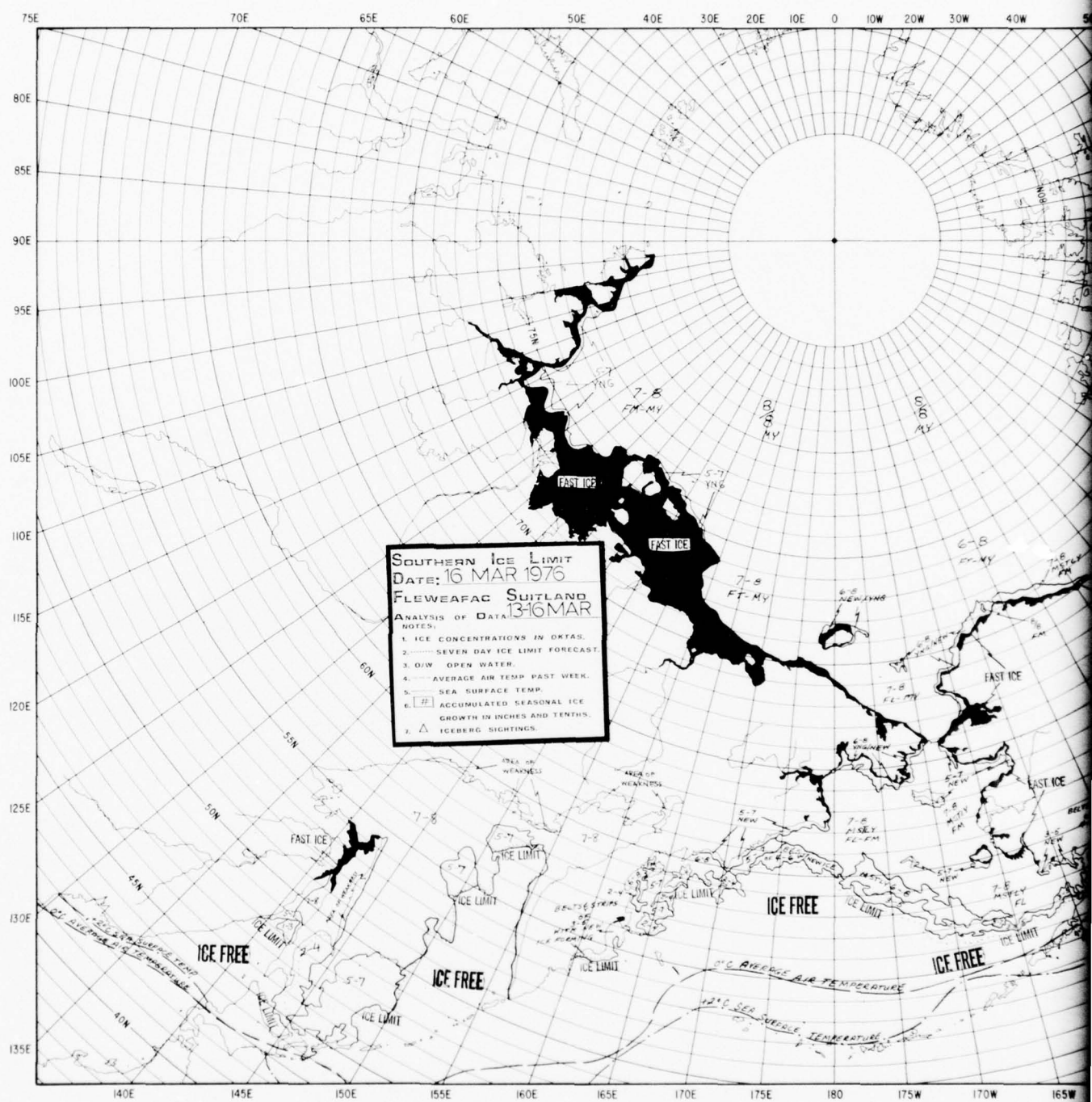


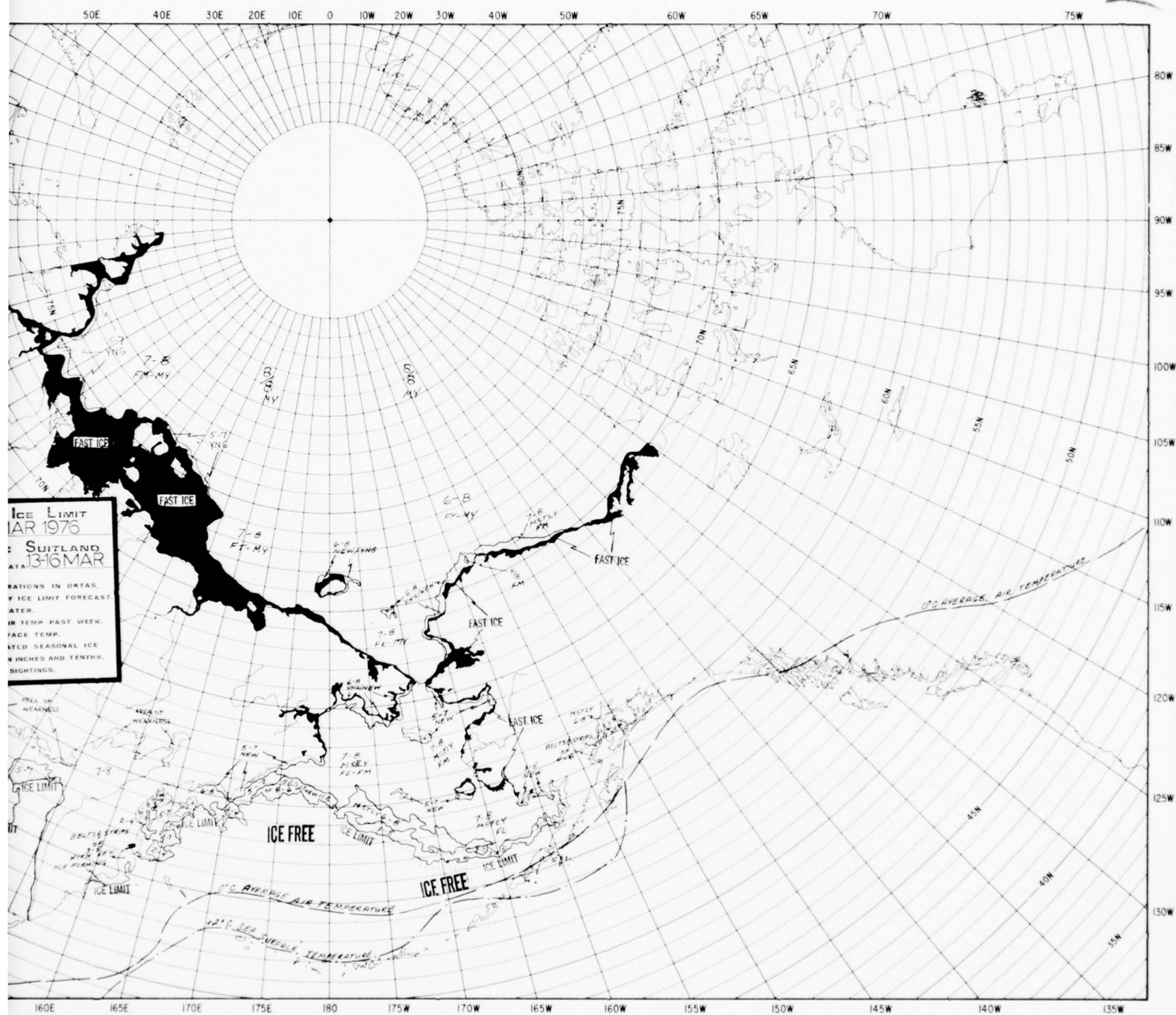


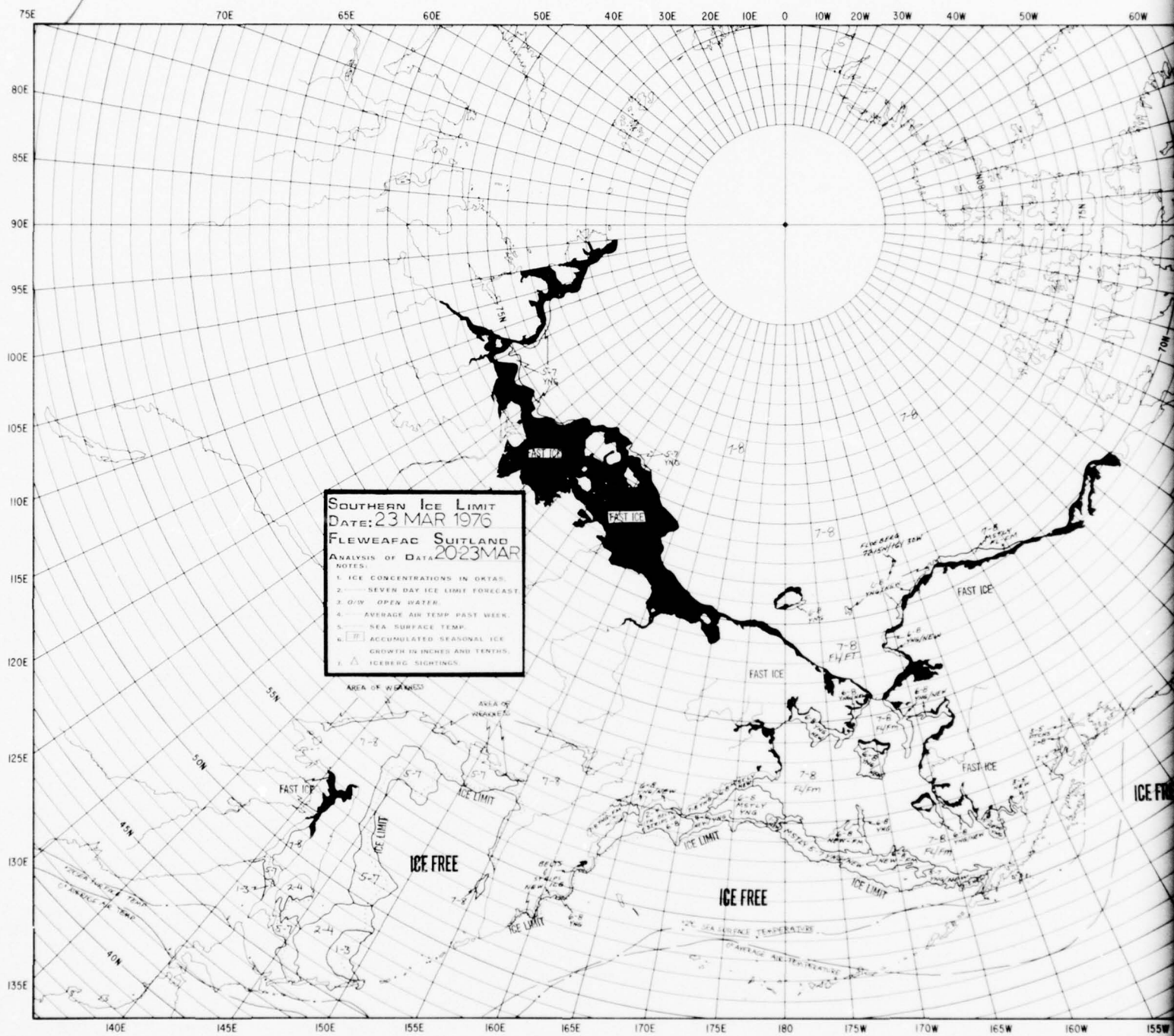


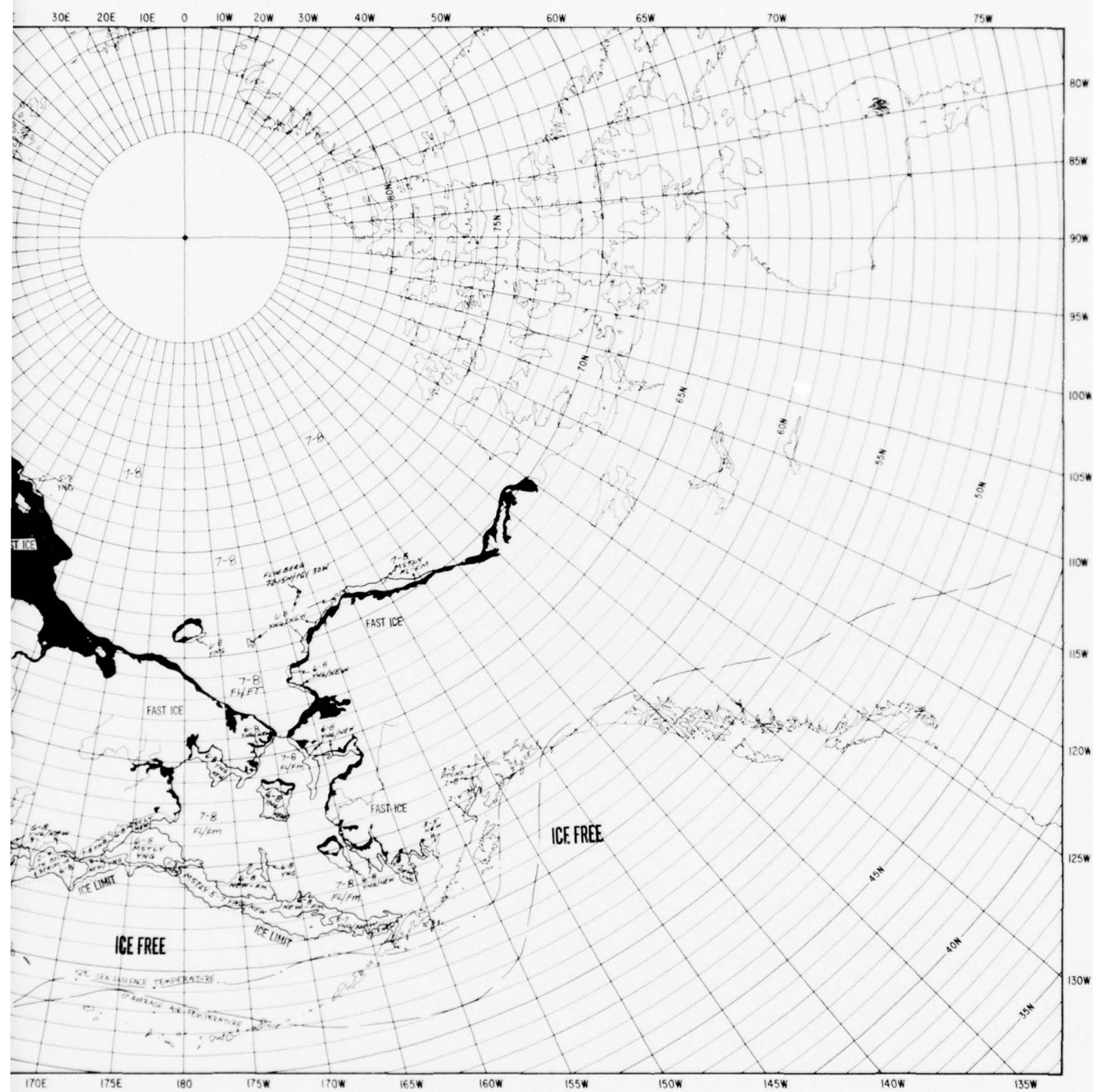


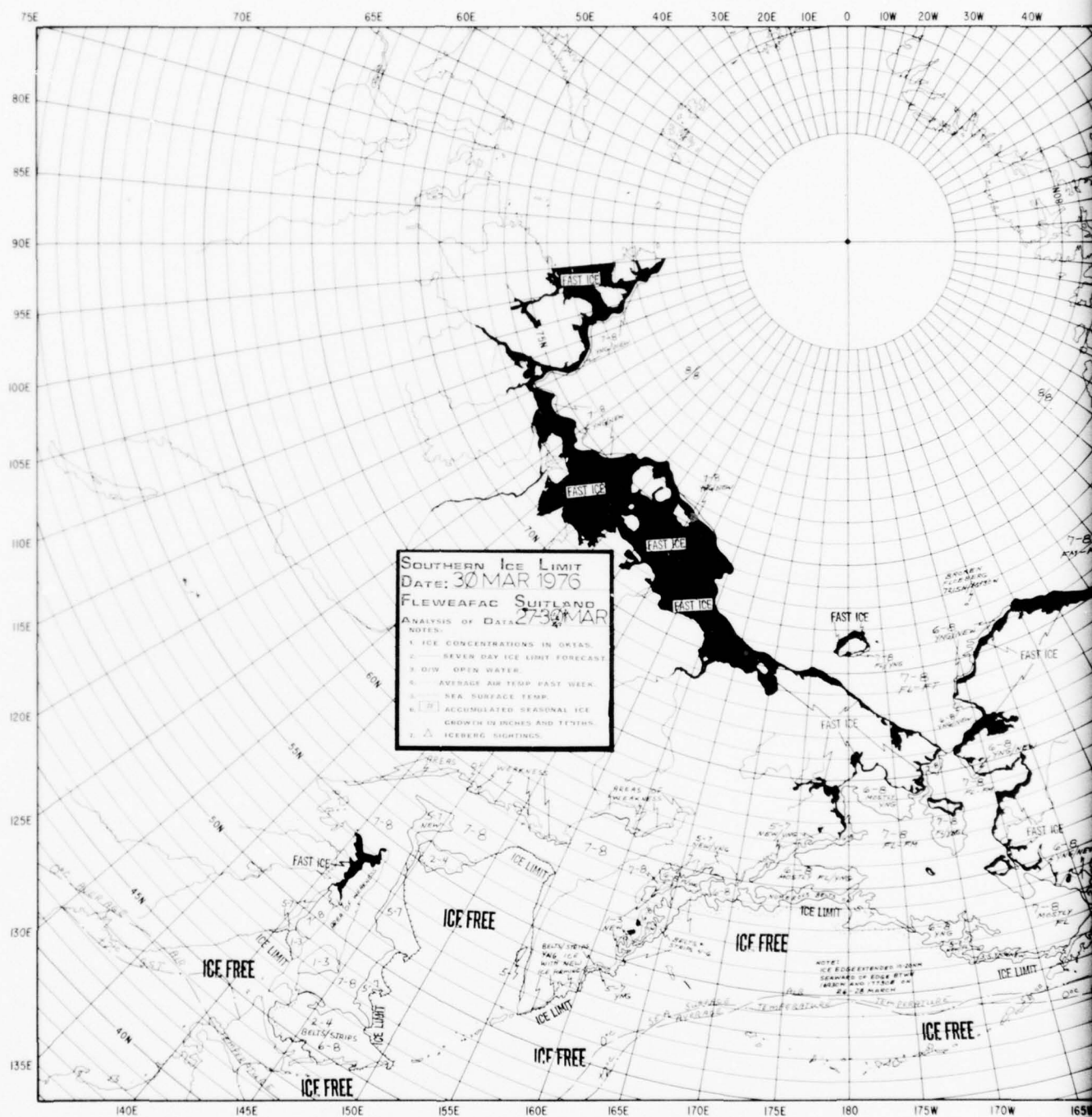


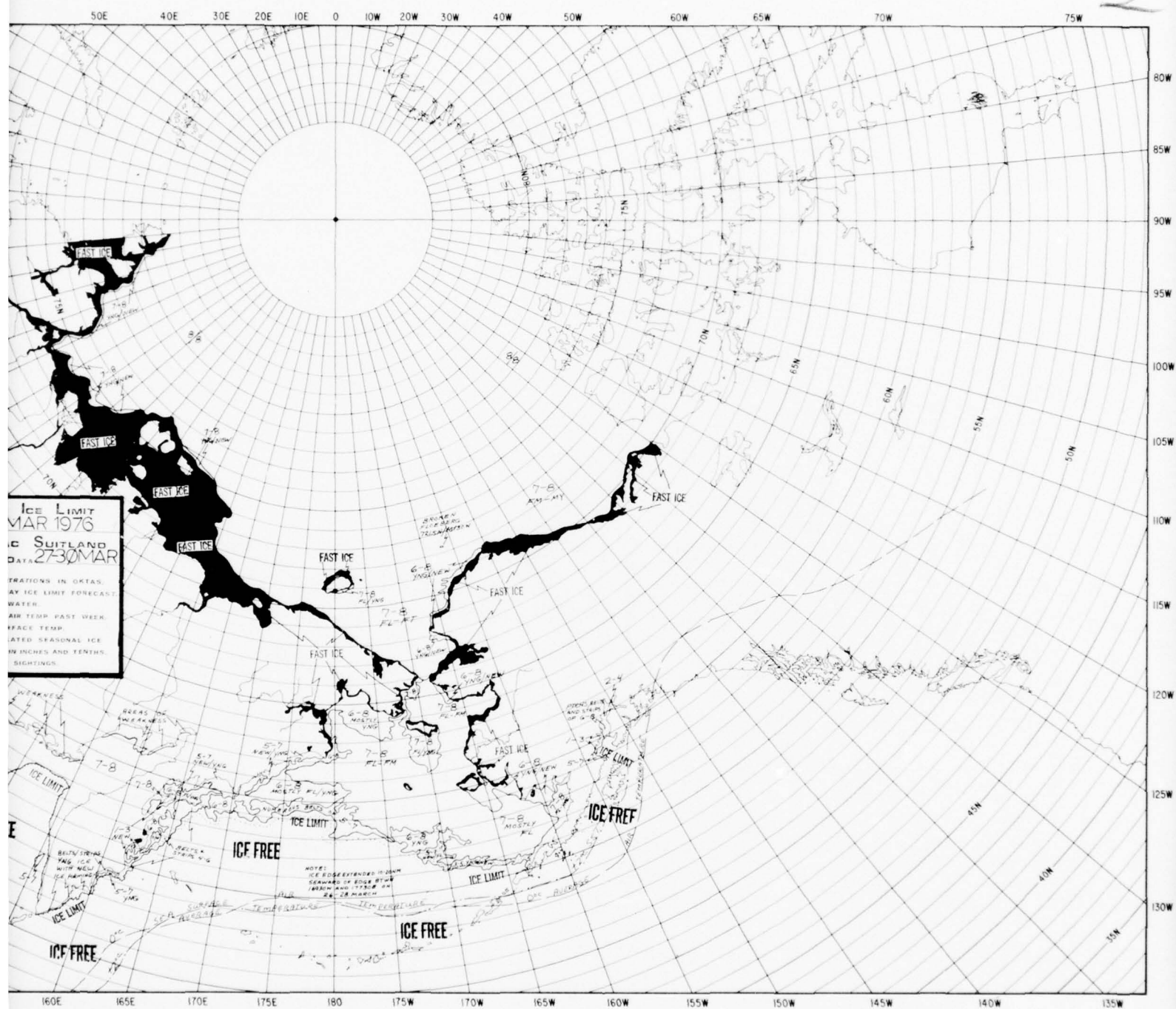


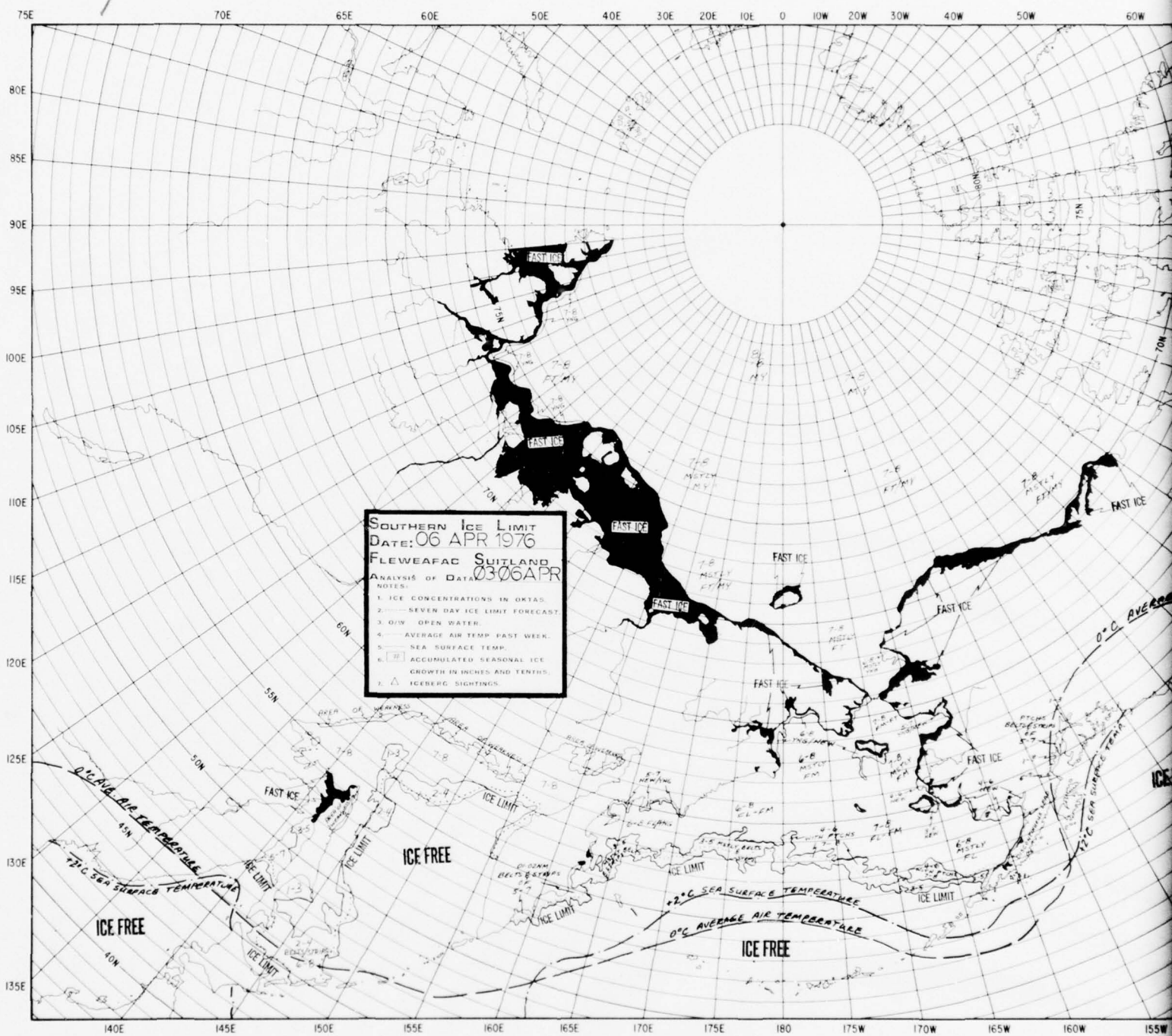


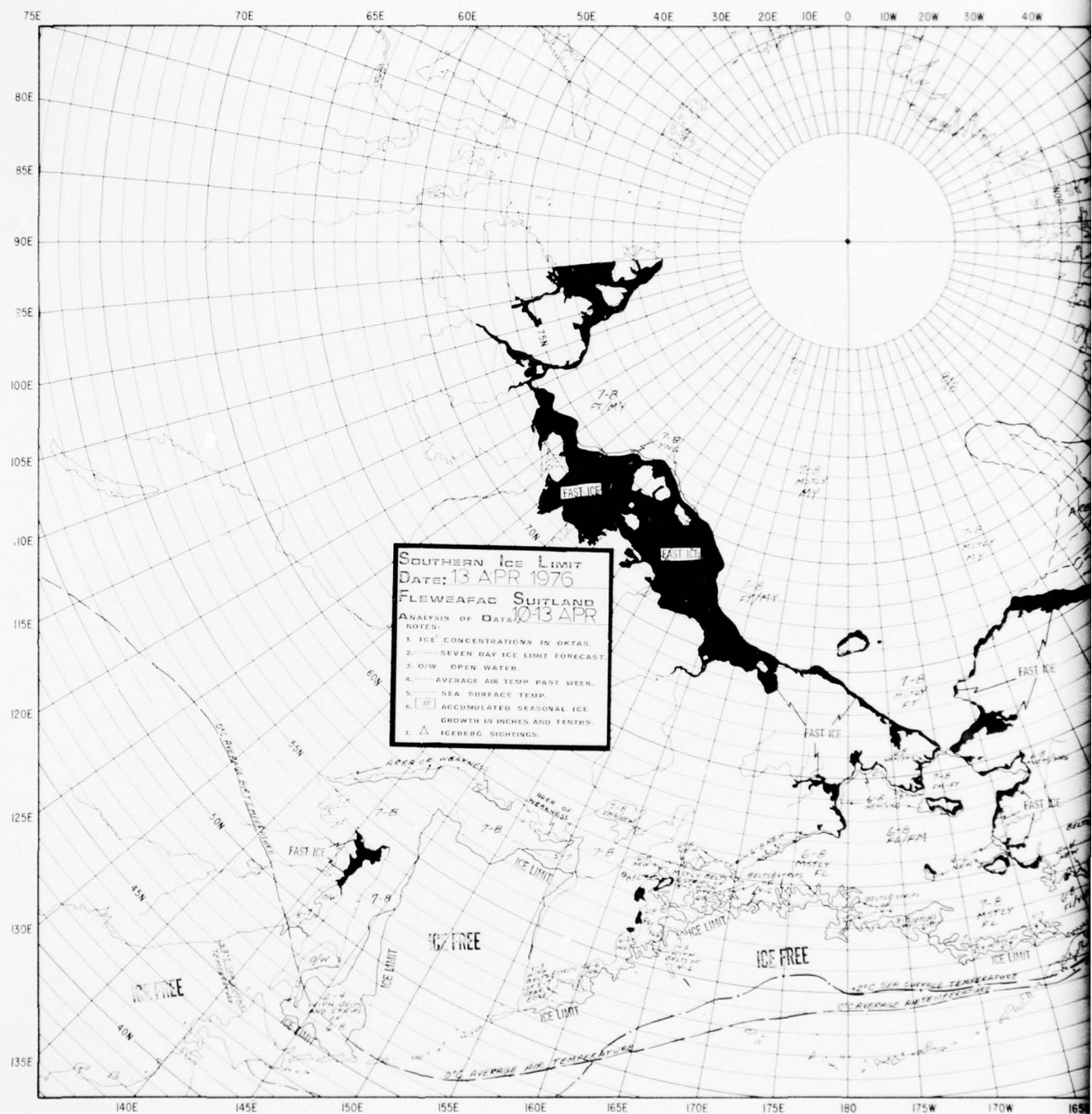


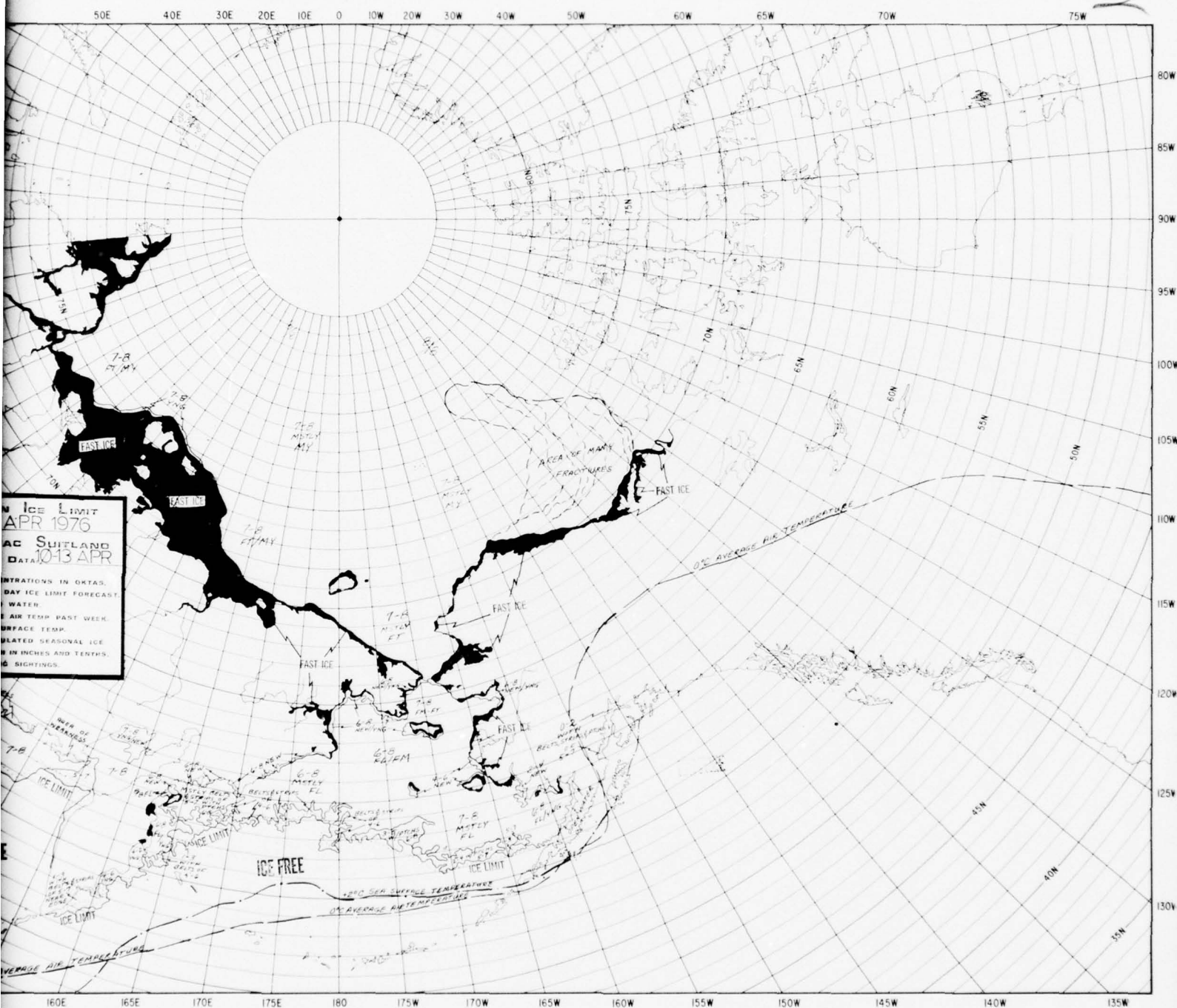


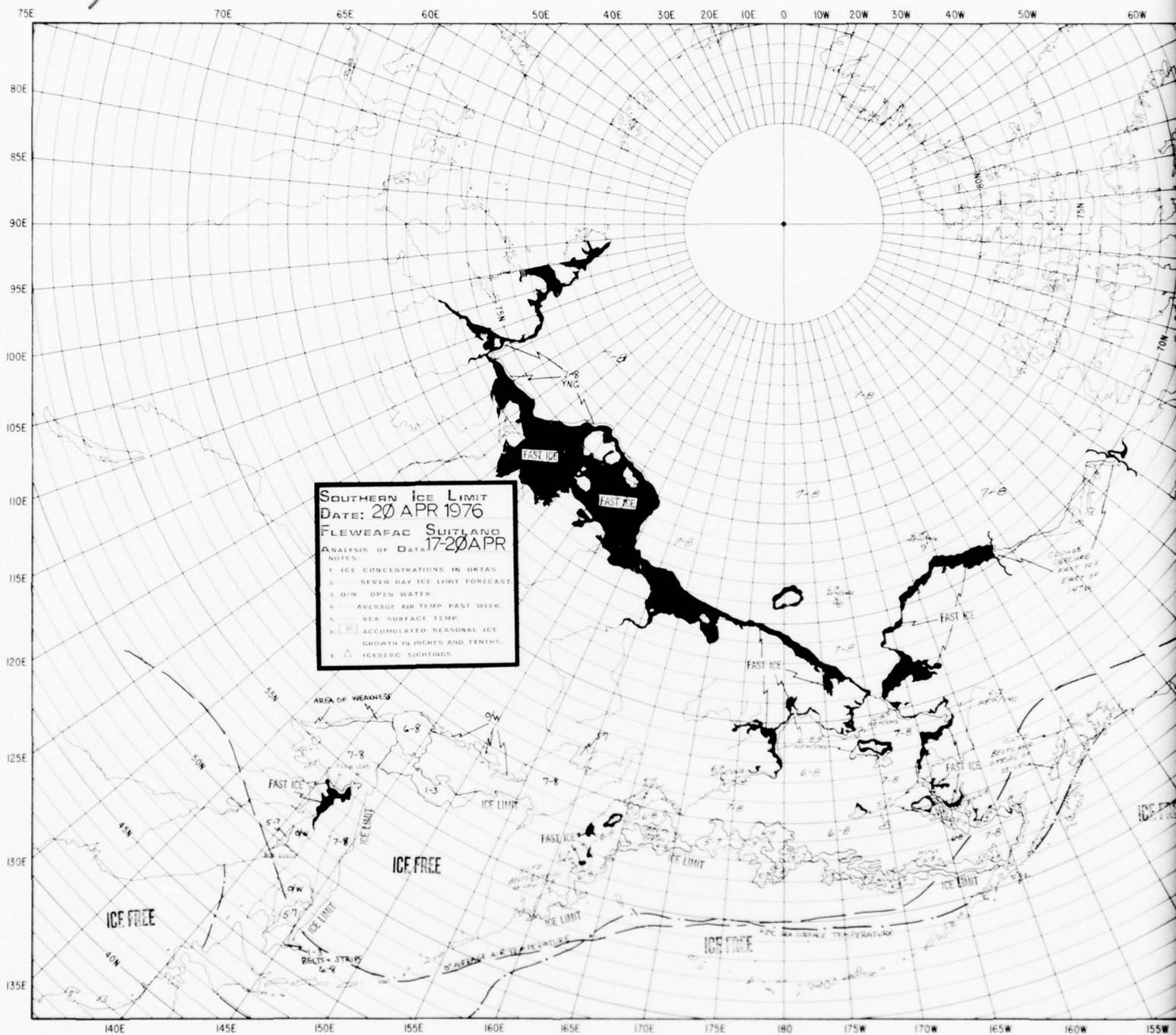


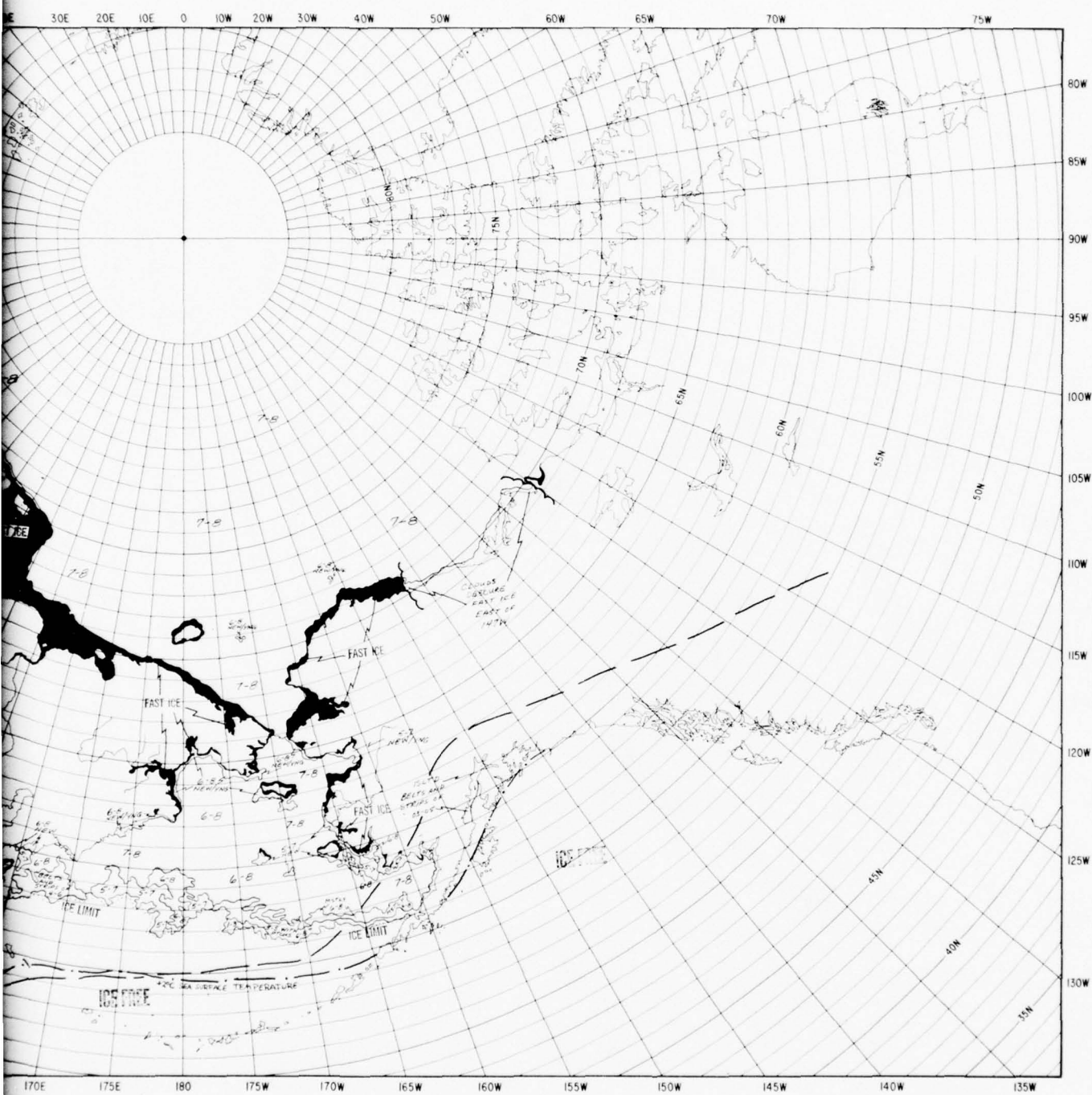


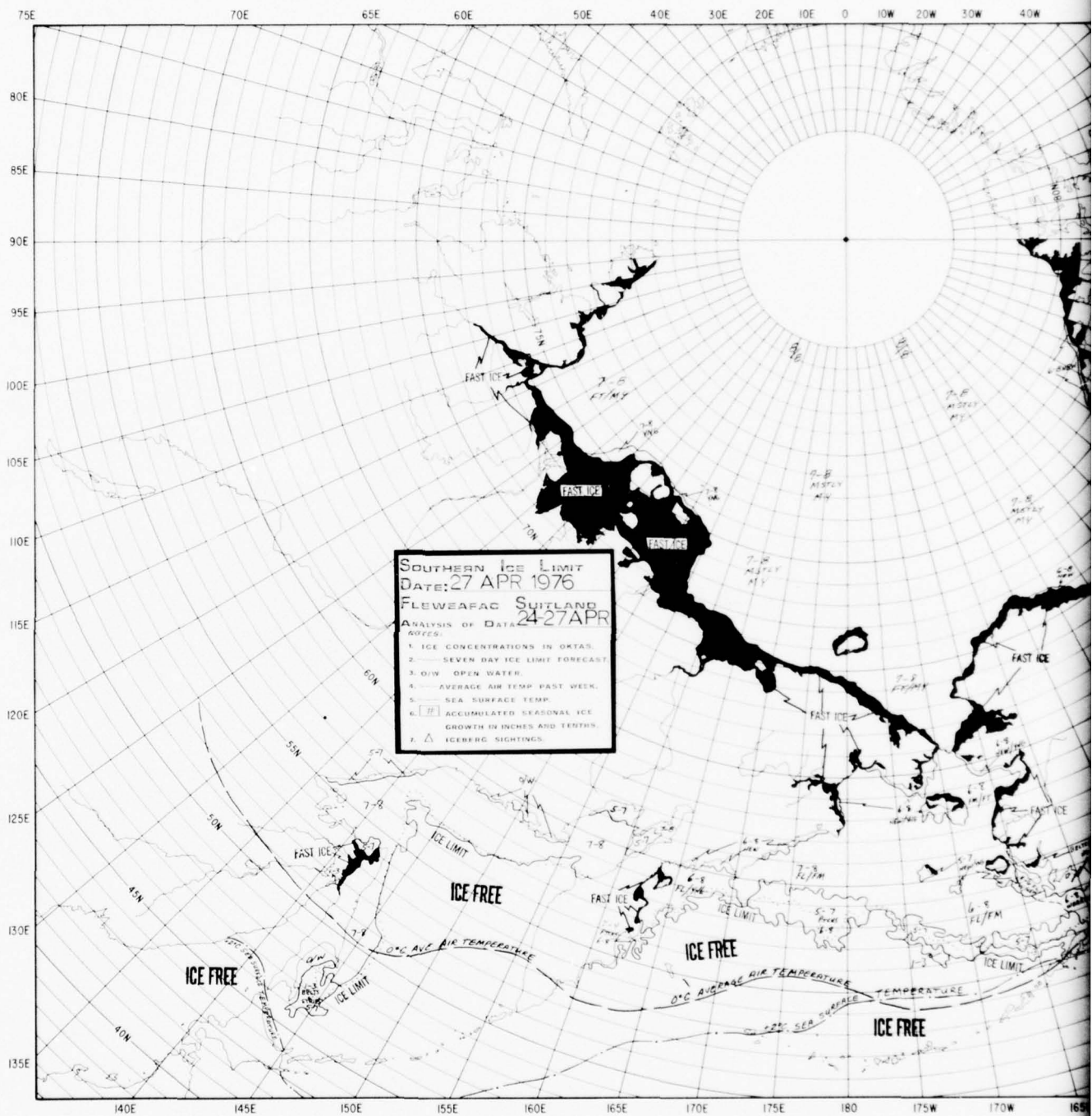


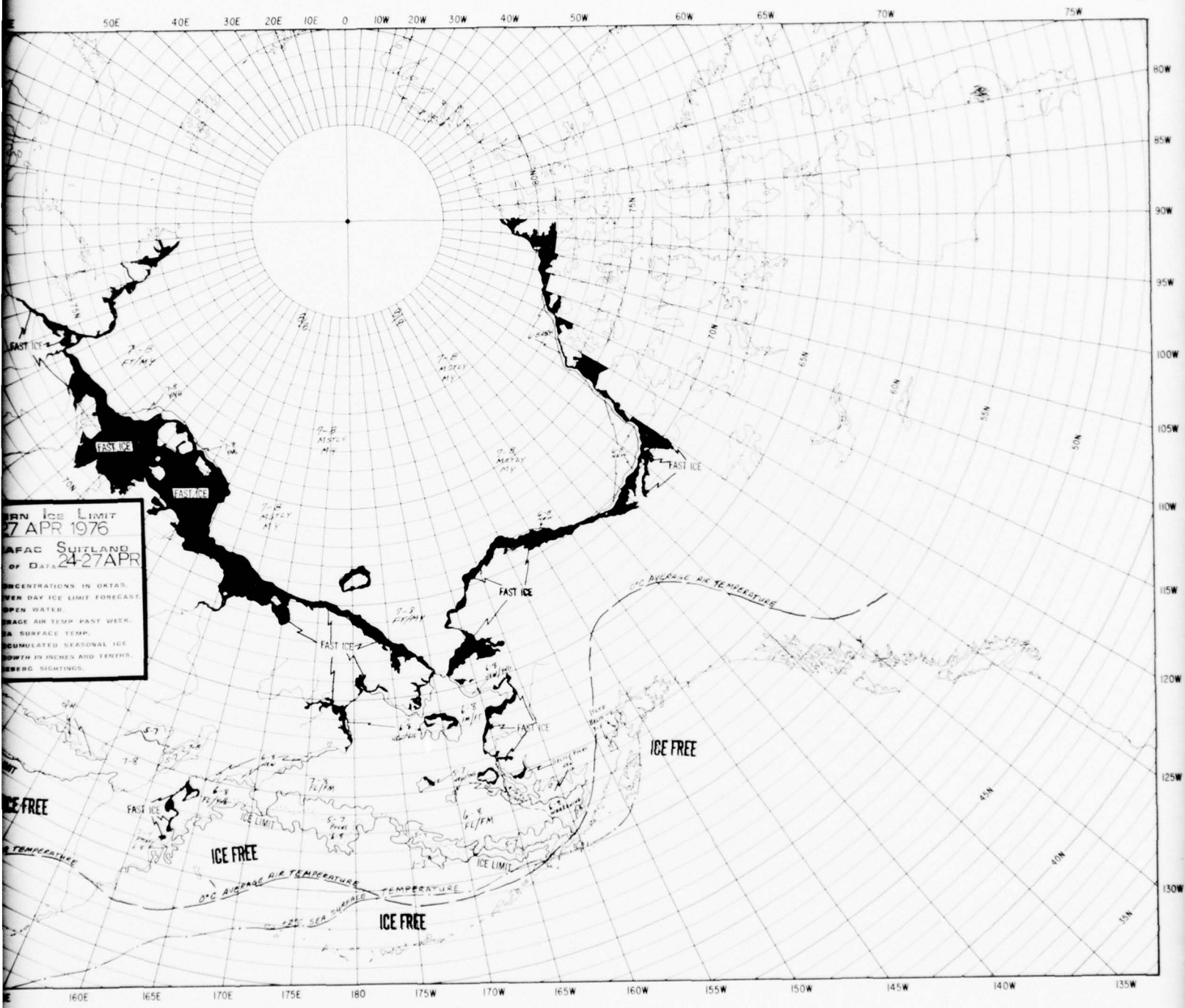


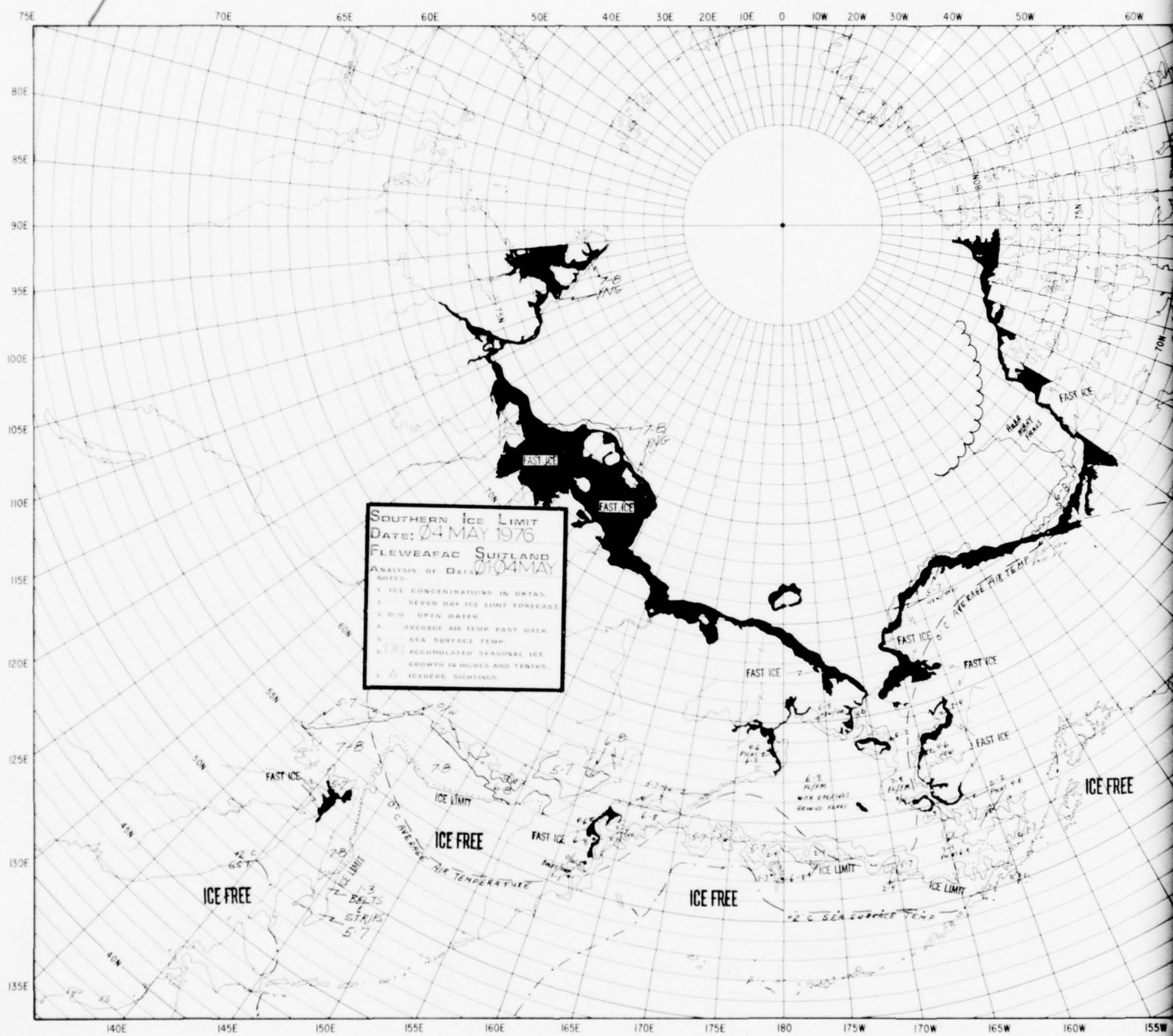


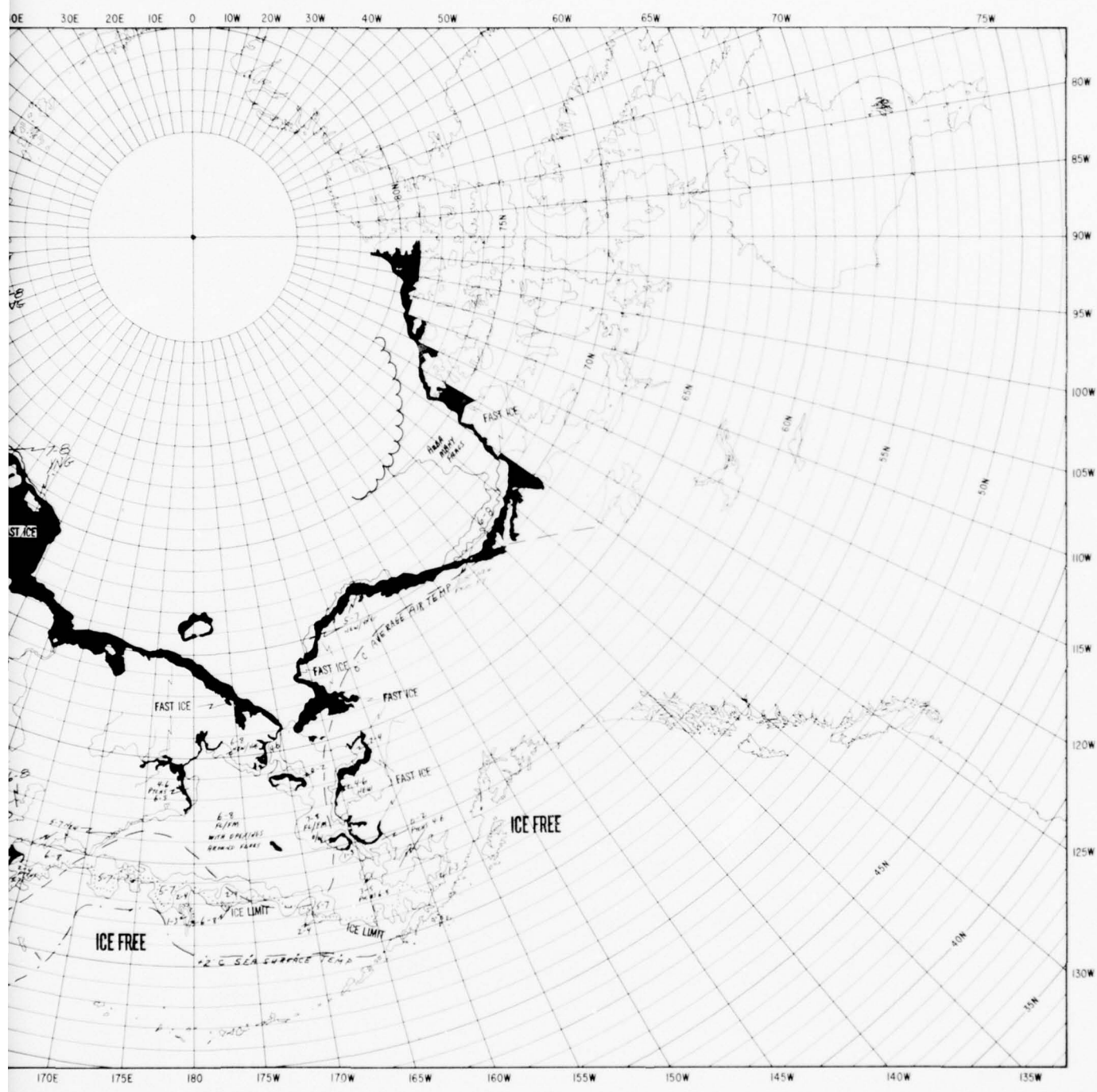


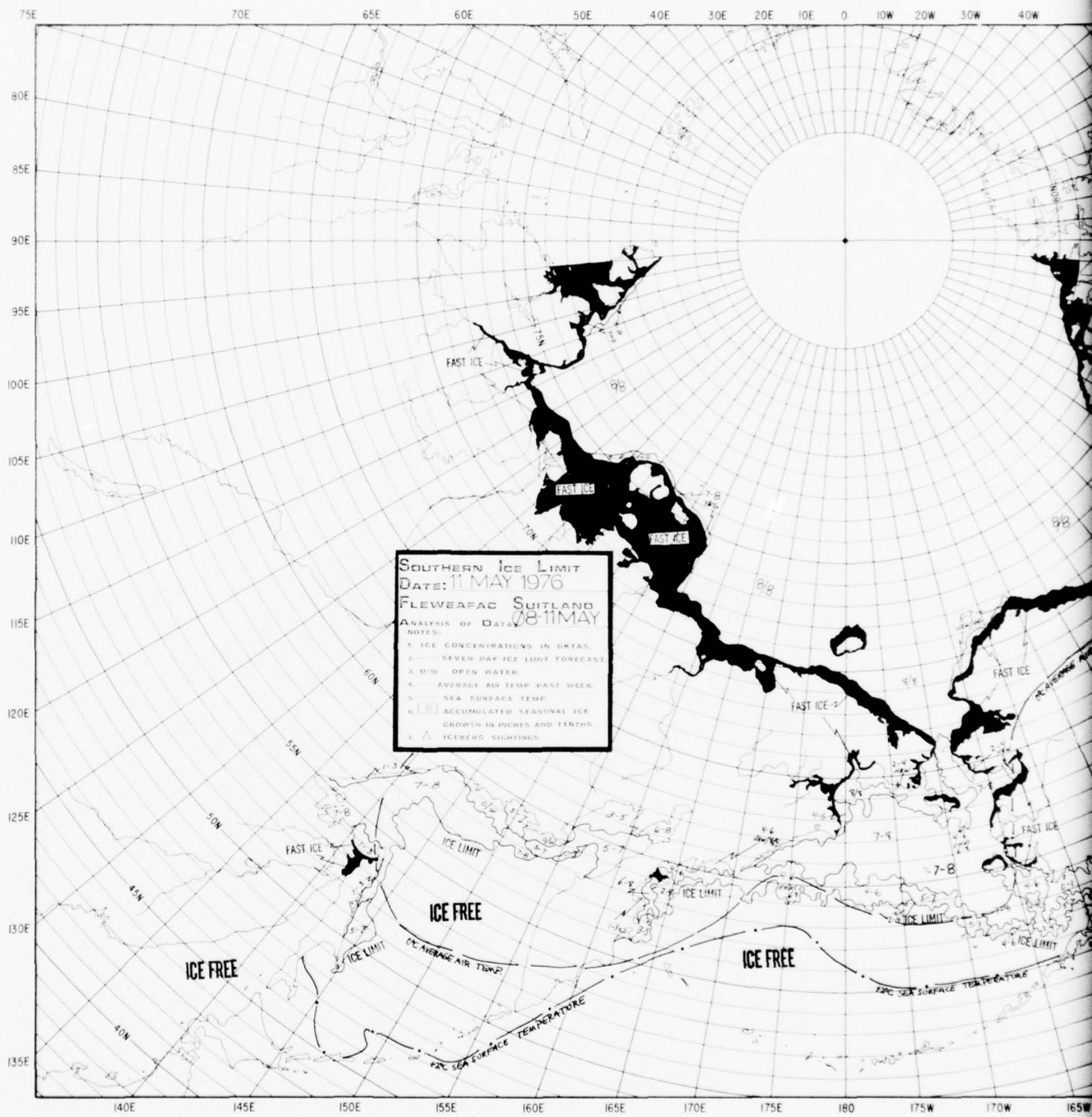


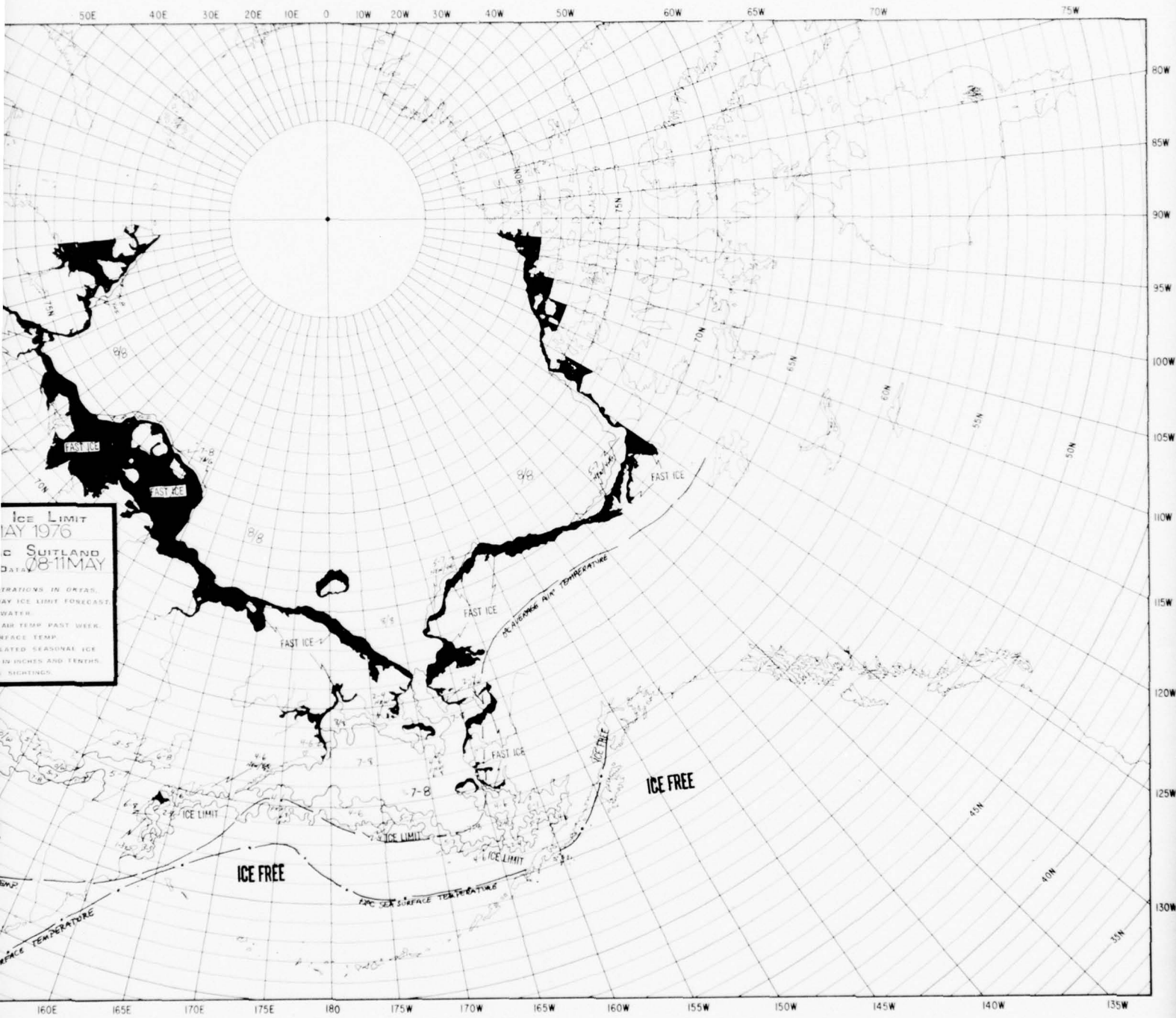




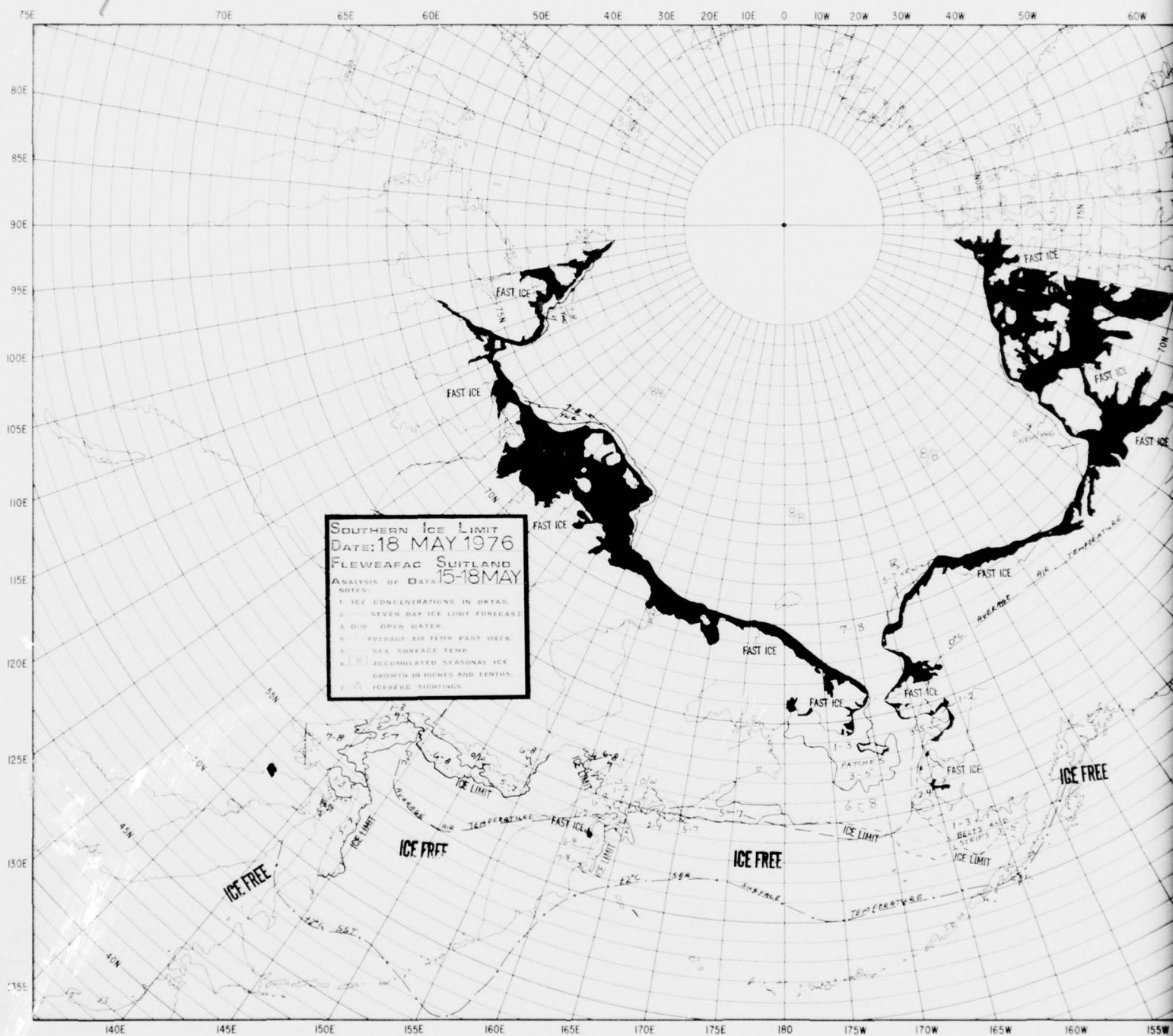


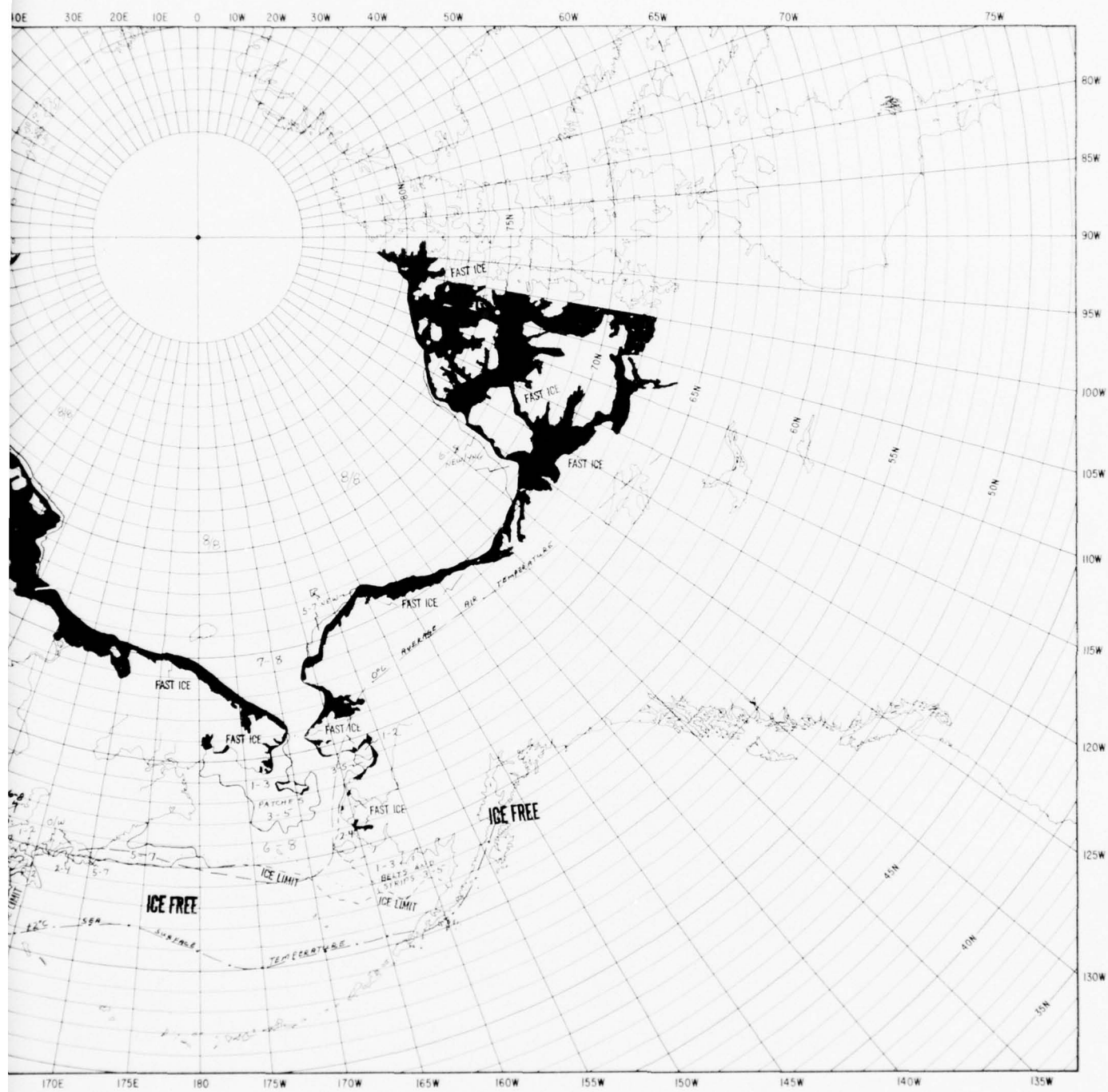


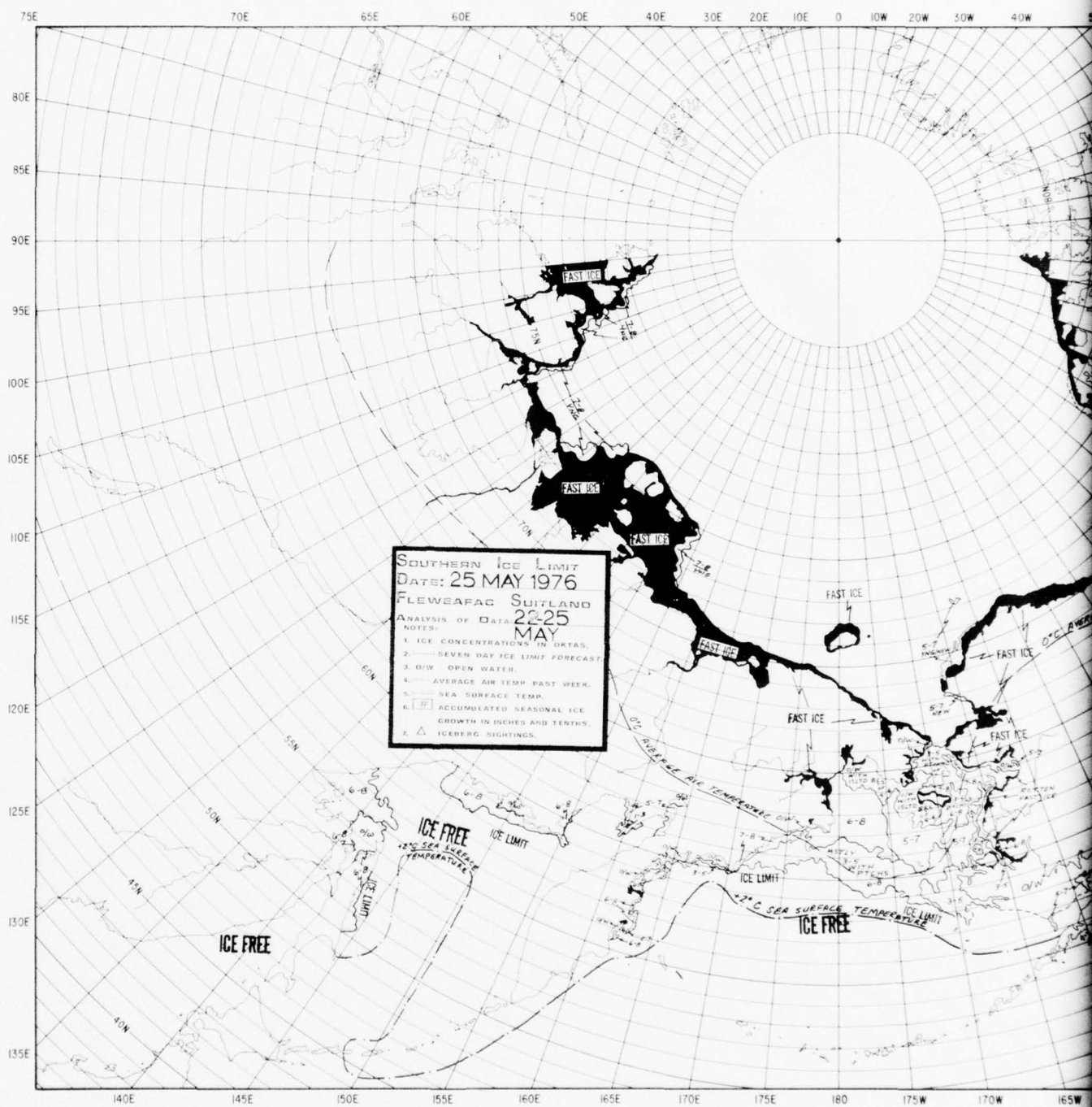


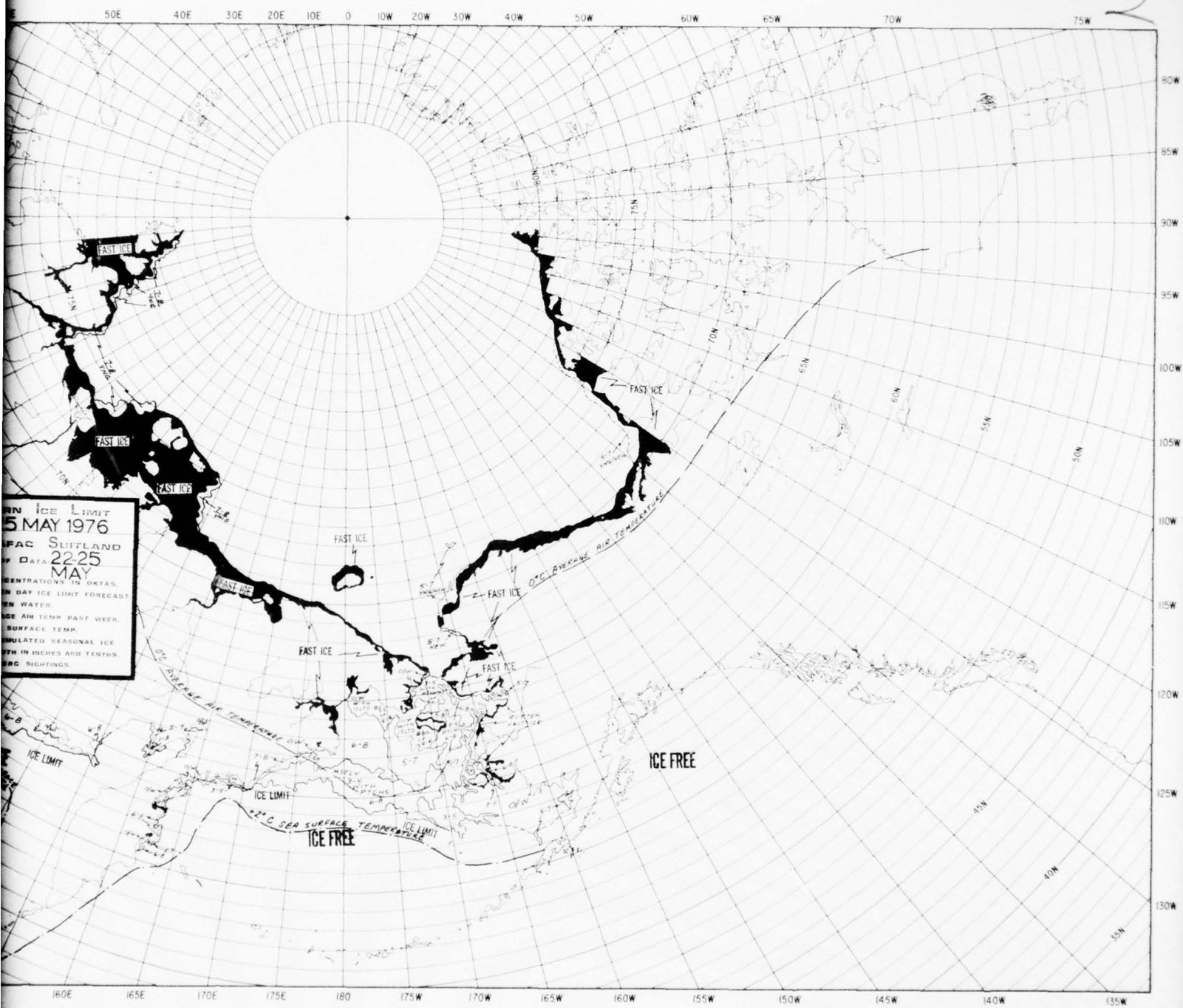


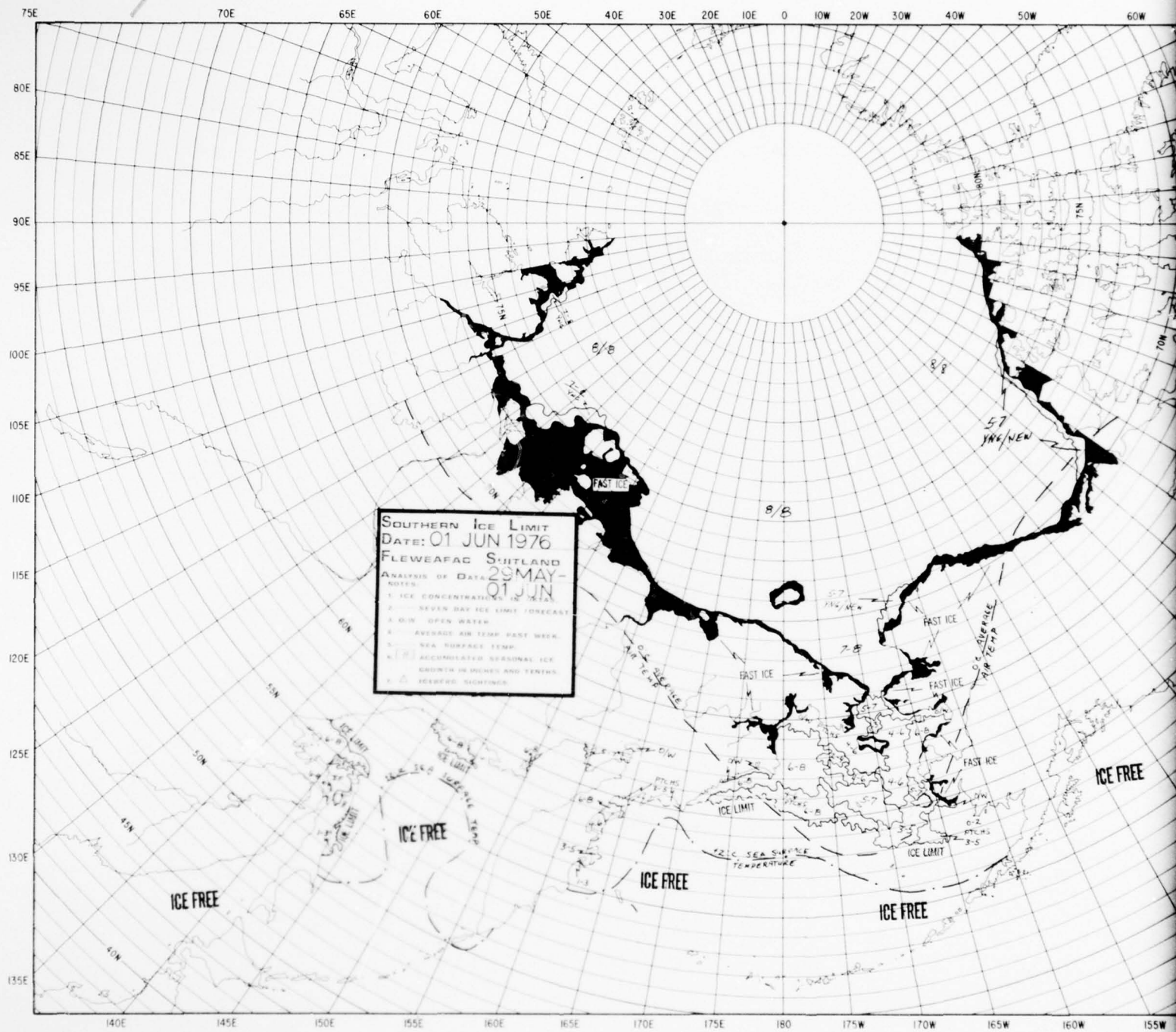
ICE LIMIT
MAY 1976
C. SUITLAND
DATA
TRATIONS IN OYAS.
AY ICE LIMIT FORECAST
WATER
AIR TEMP PAST WEEK
FACE TEMP
LATED SEASONAL ICE
IN INCHES AND TENTHS
SIGHTINGS



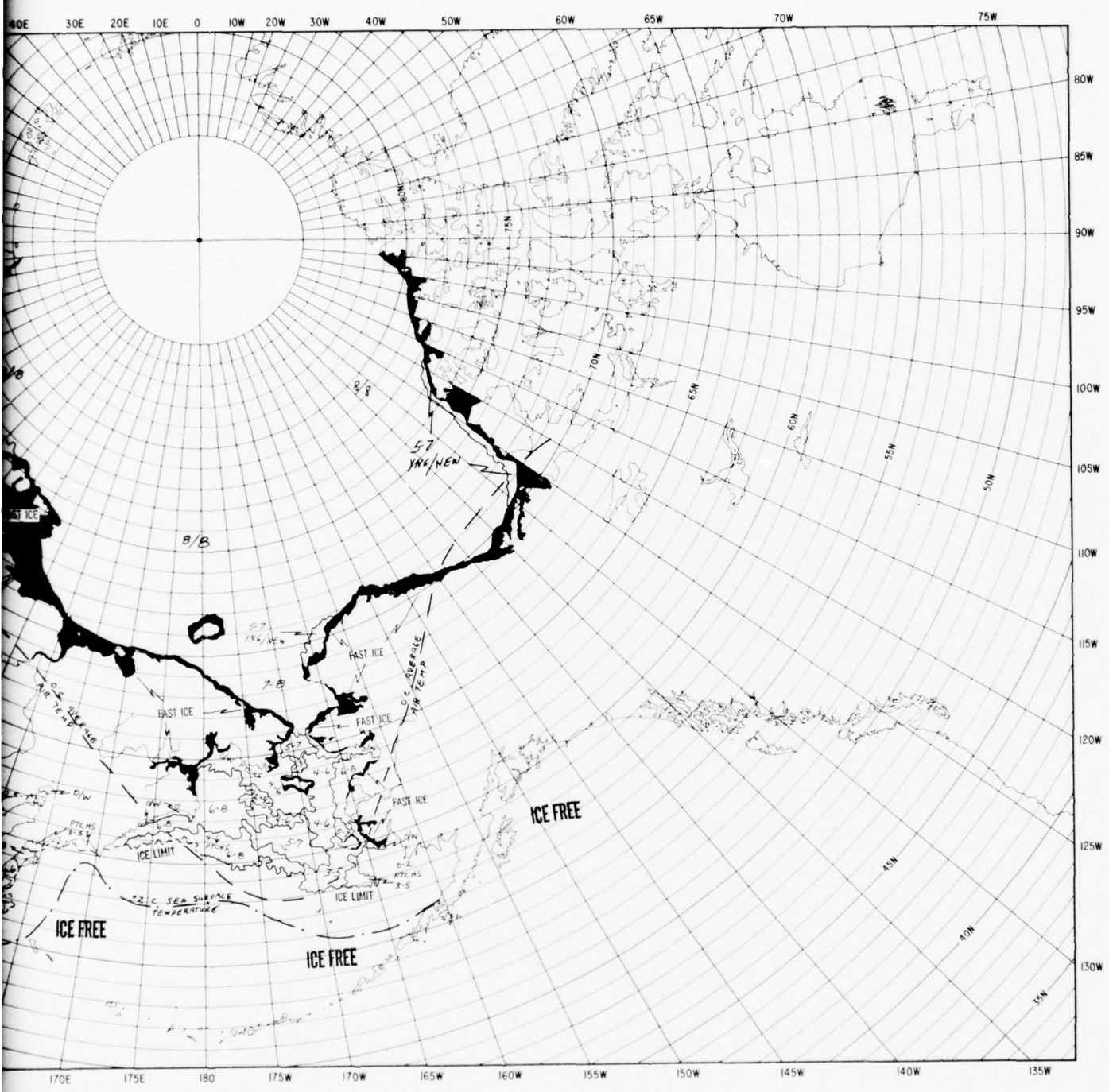


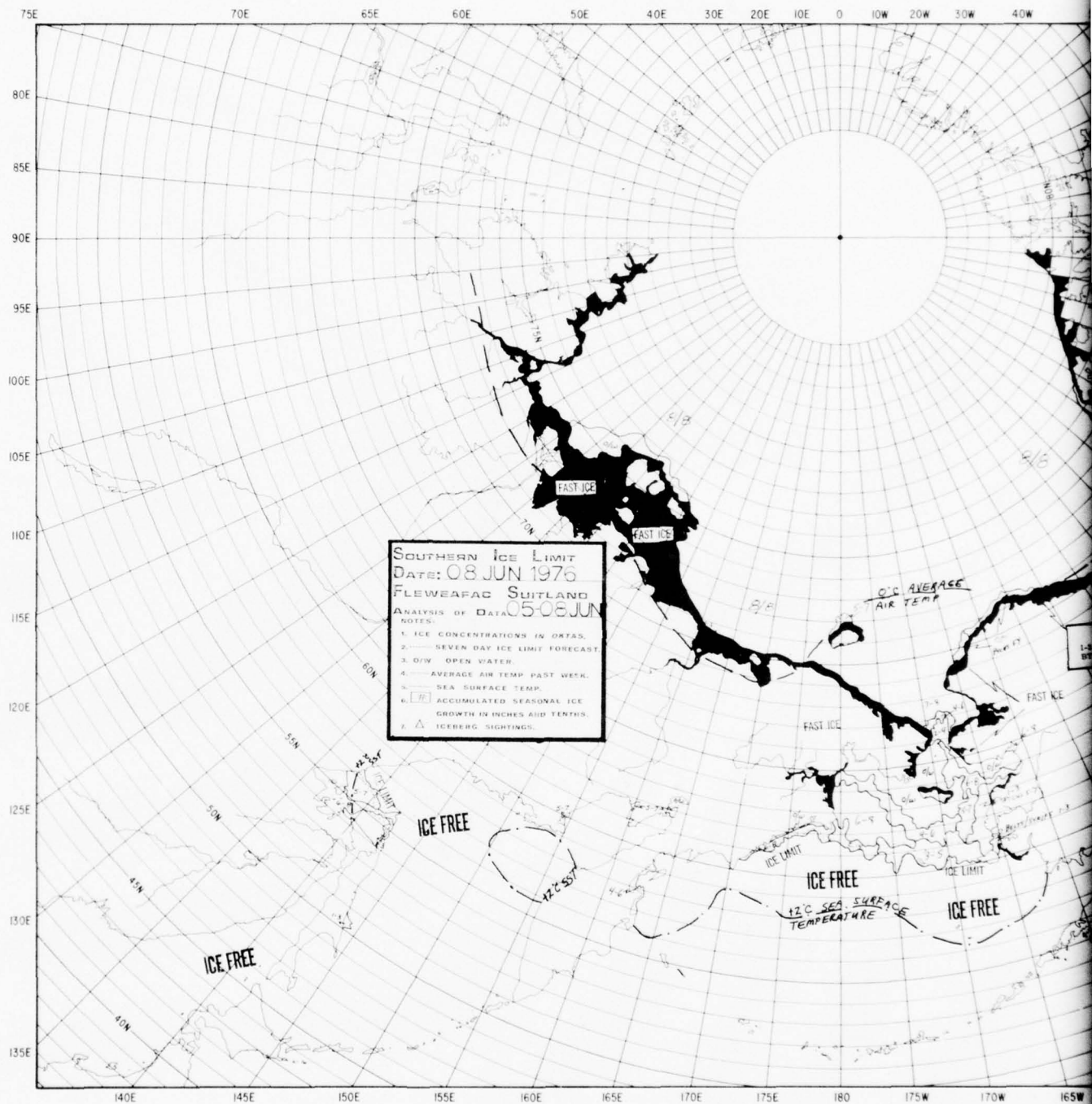


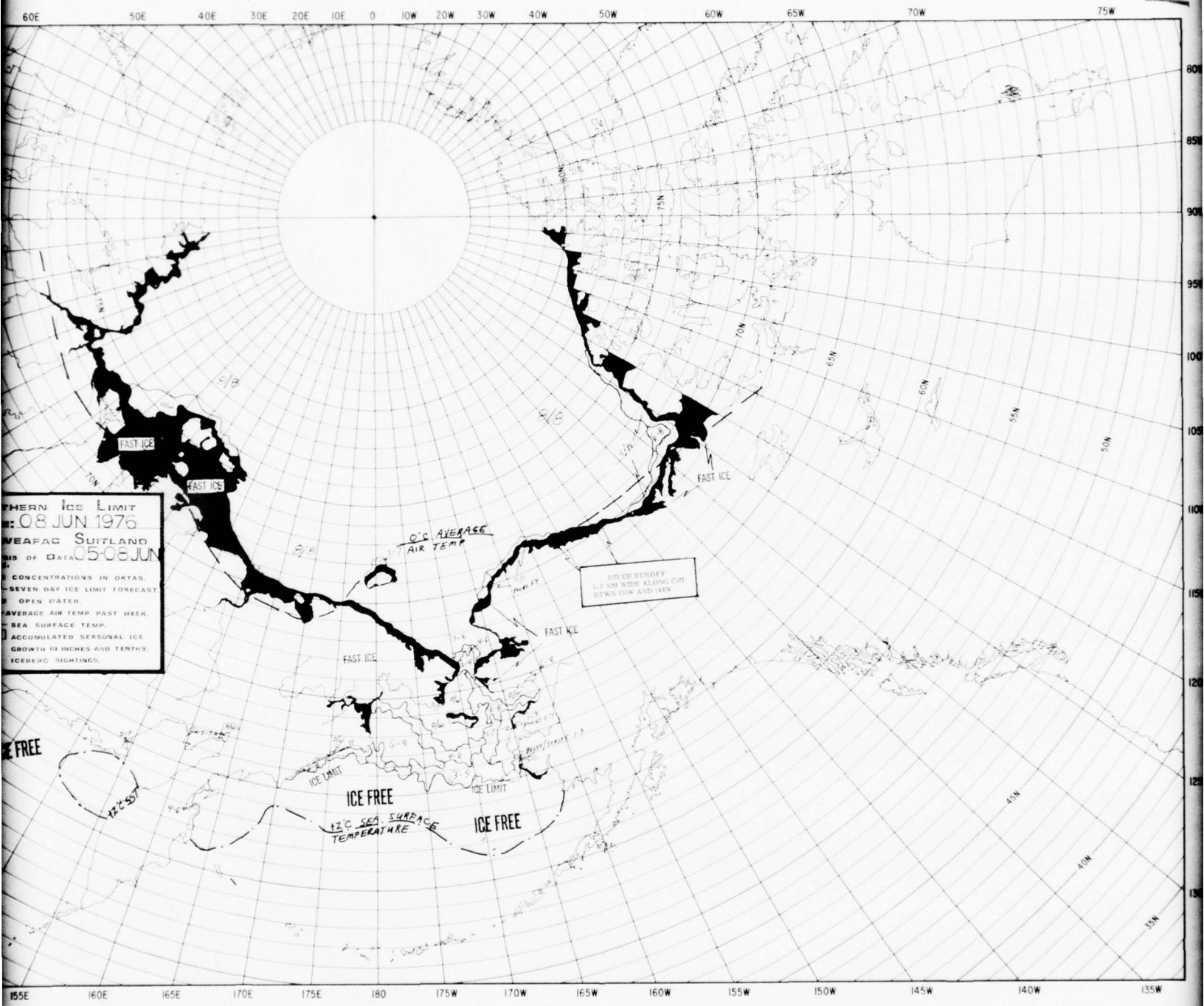




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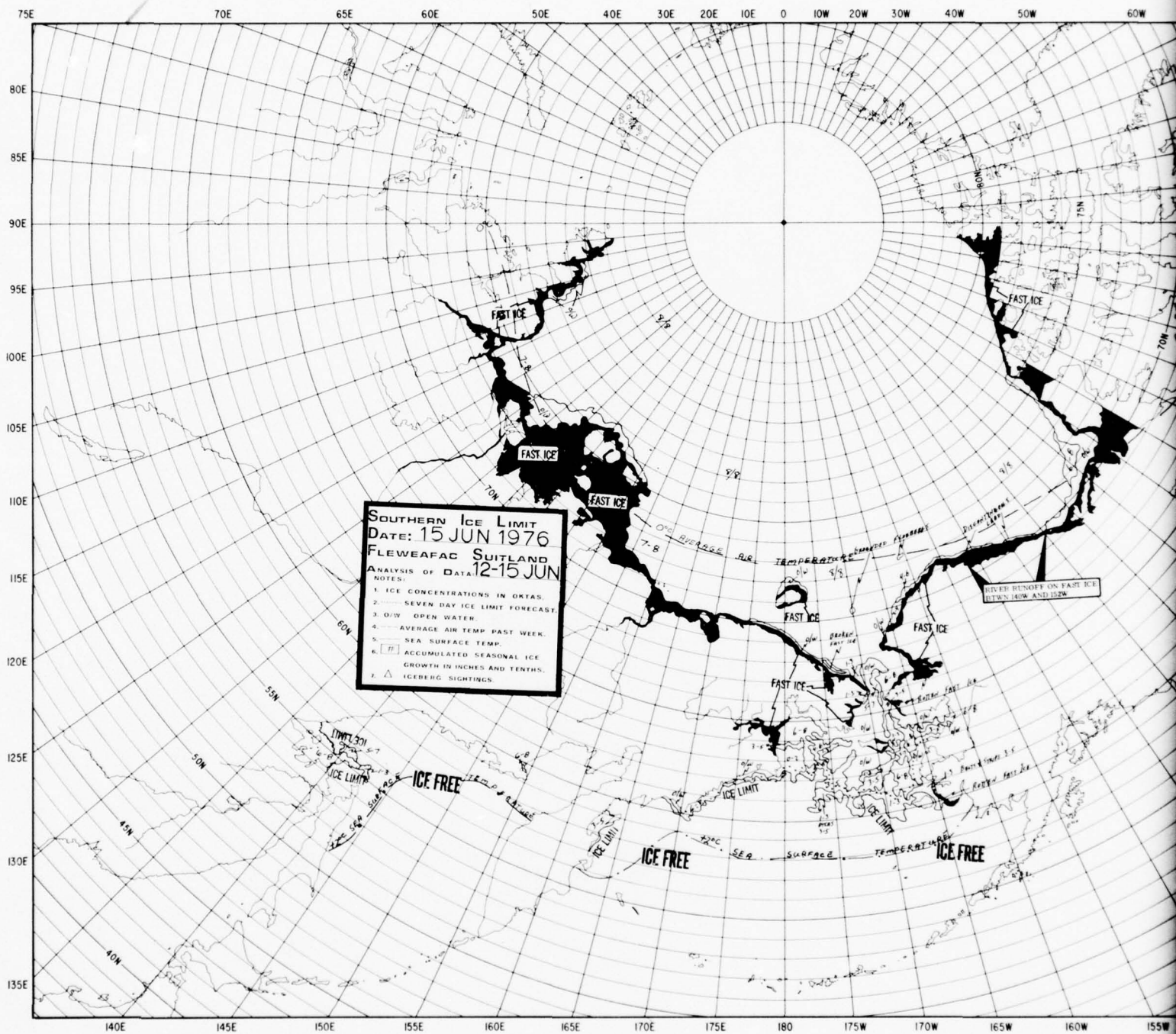


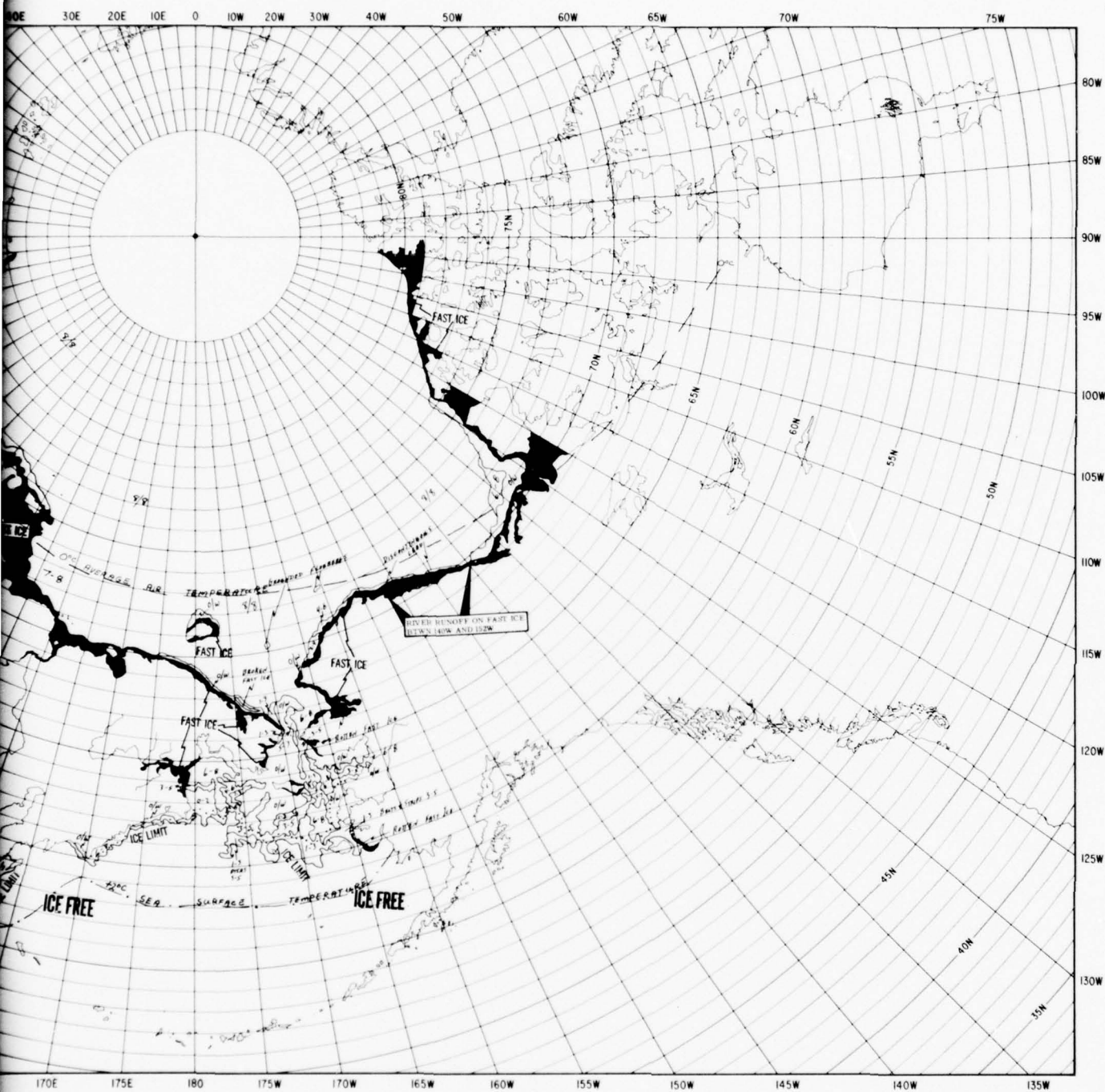
Northern Ice Limit
08 JUN 1976
WEAFAC SUTLAND
05-08 JUN
CONCENTRATIONS IN OKTAS,
SEVEN DAY ICE LIMIT FORECAST
OPEN WATER
AVERAGE AIR TEMP PAST WEEK
SEA SURFACE TEMP
ACCUMULATED SEASONAL ICE
GROWTH IN INCHES AND TENTHS
ICEBERG SIGHTINGS

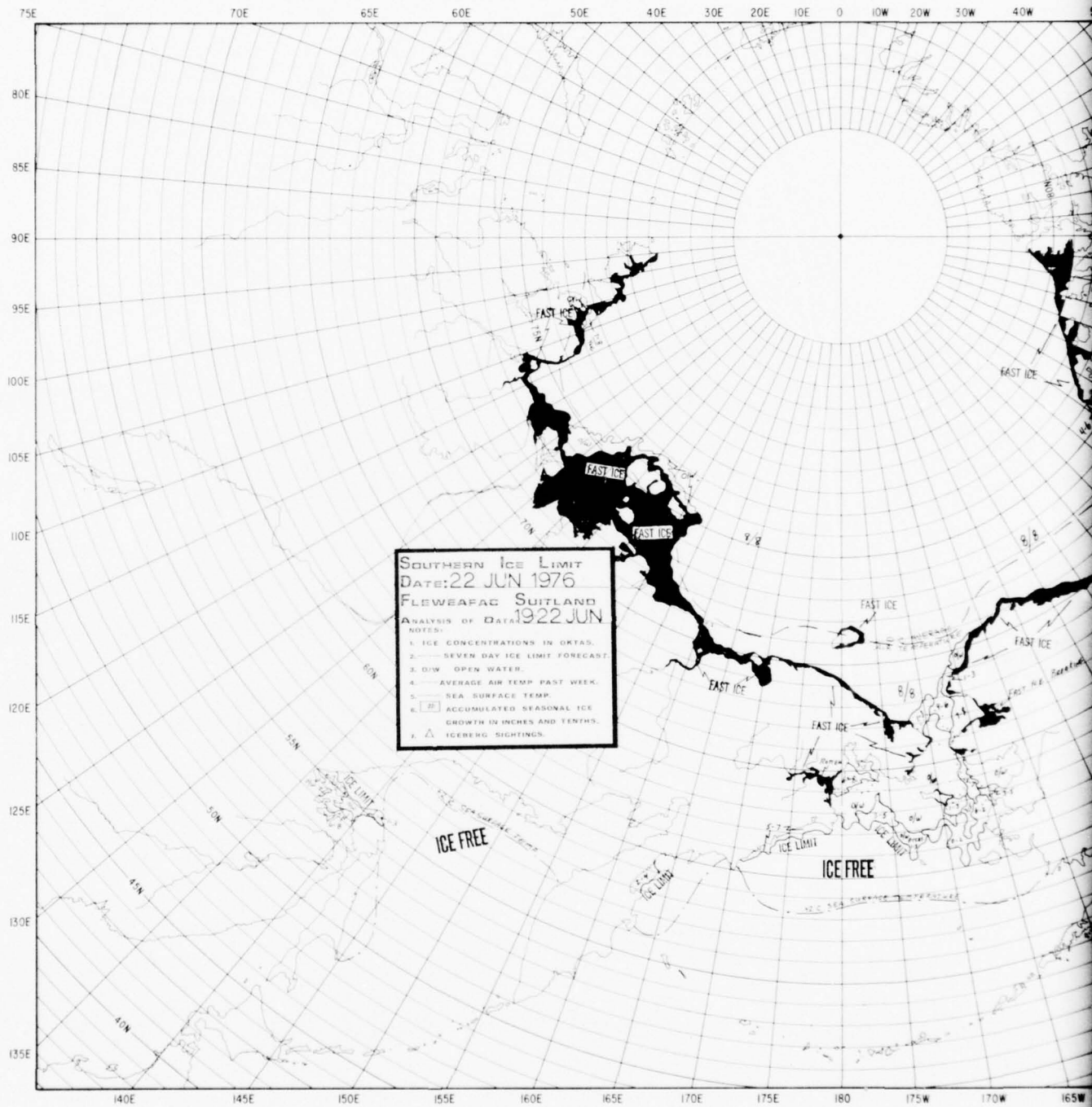
RIVER RUNOFF
1-3 NM WIDE ALONG COAST
BETWEEN 100W AND 140W

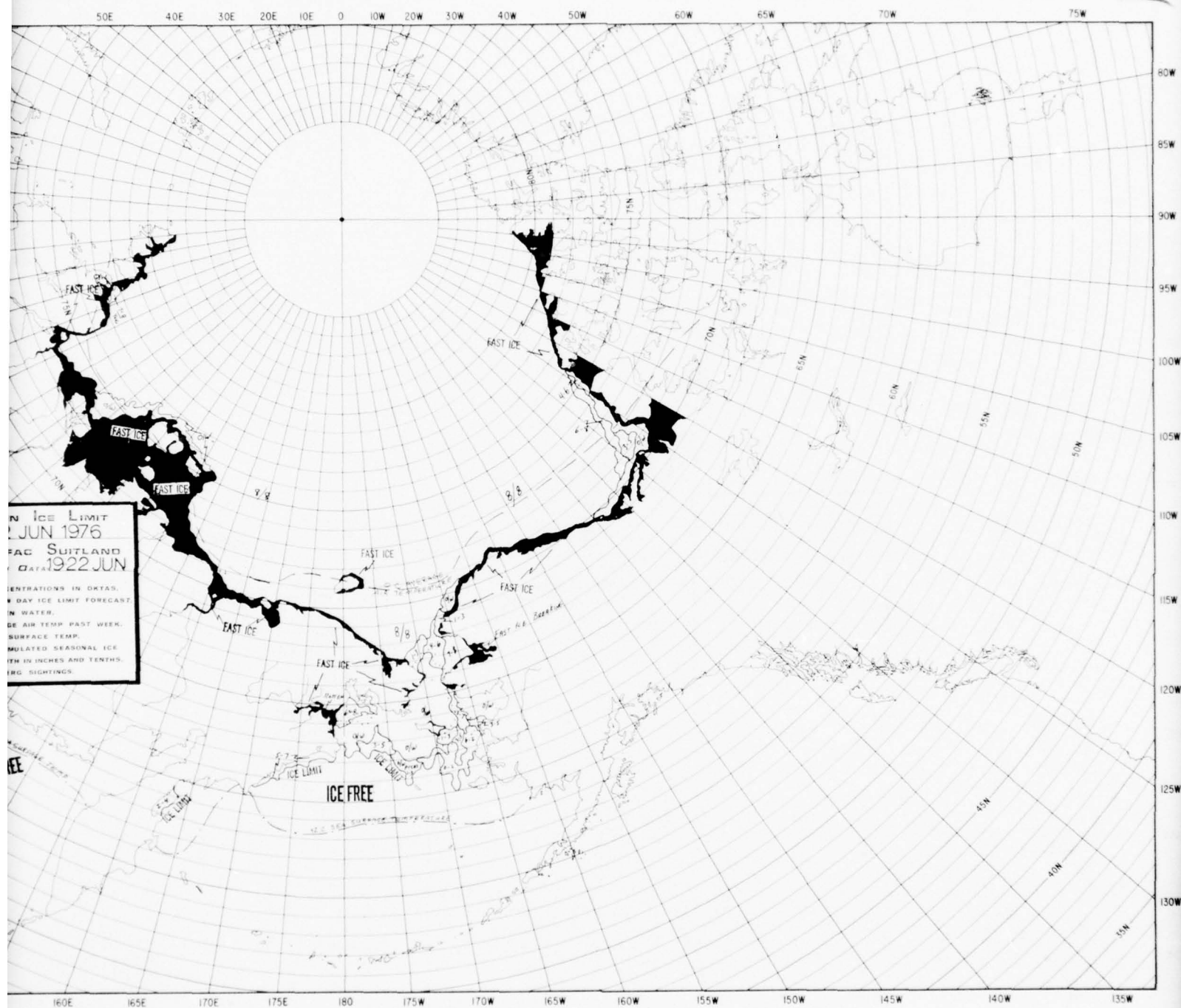
ICE FREE
12°C SEA SURFACE
TEMPERATURE

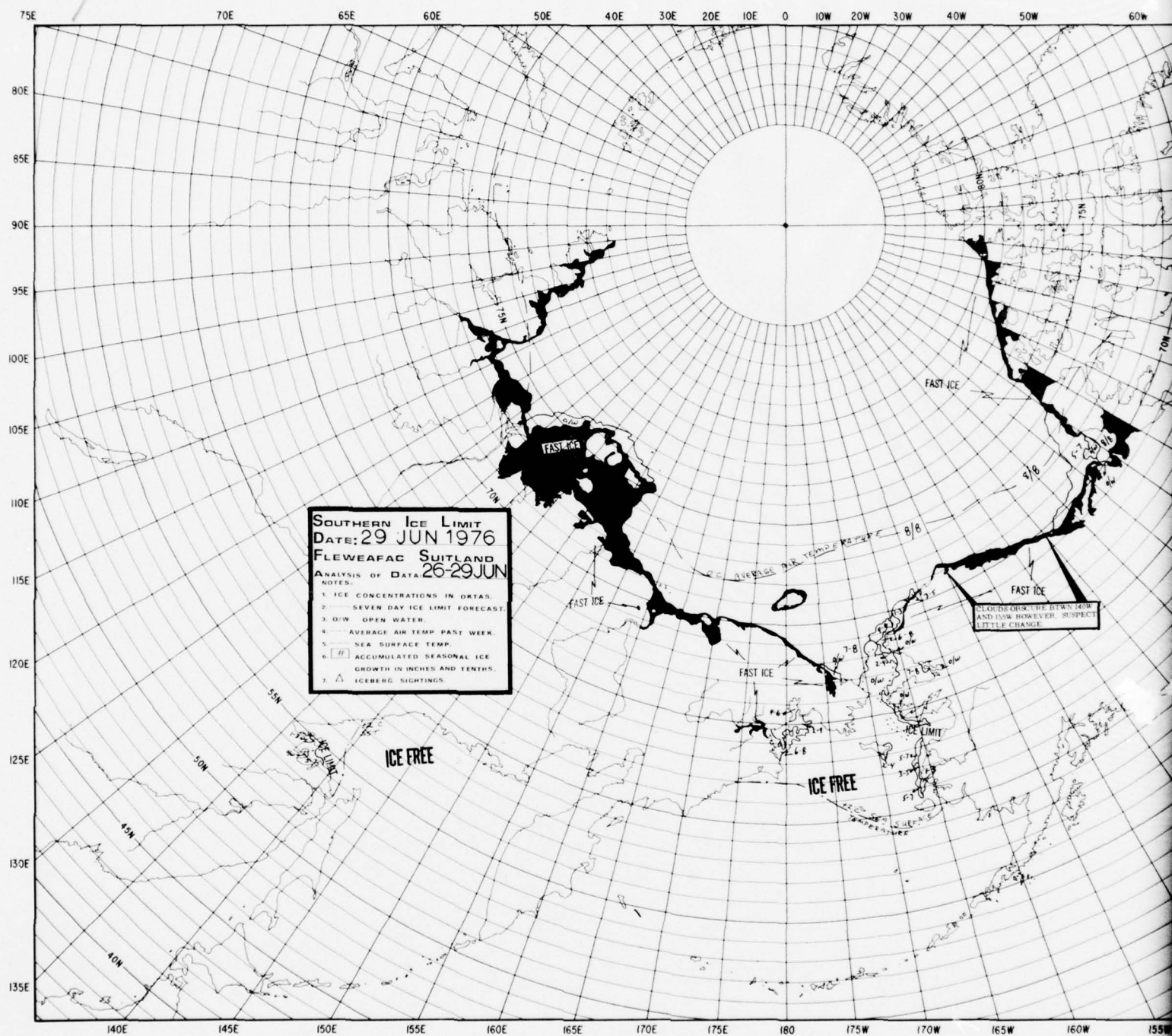
ICE FREE



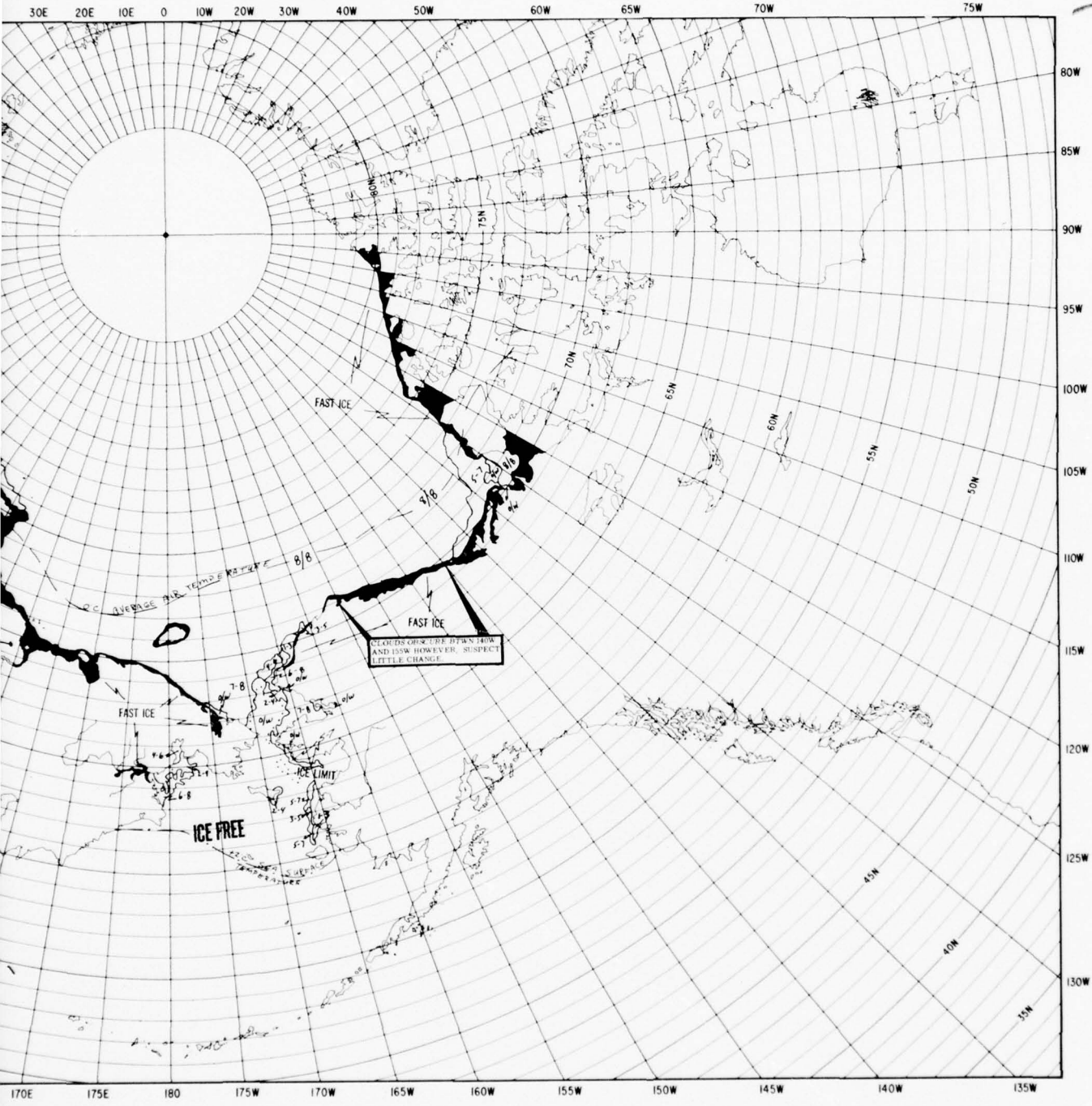


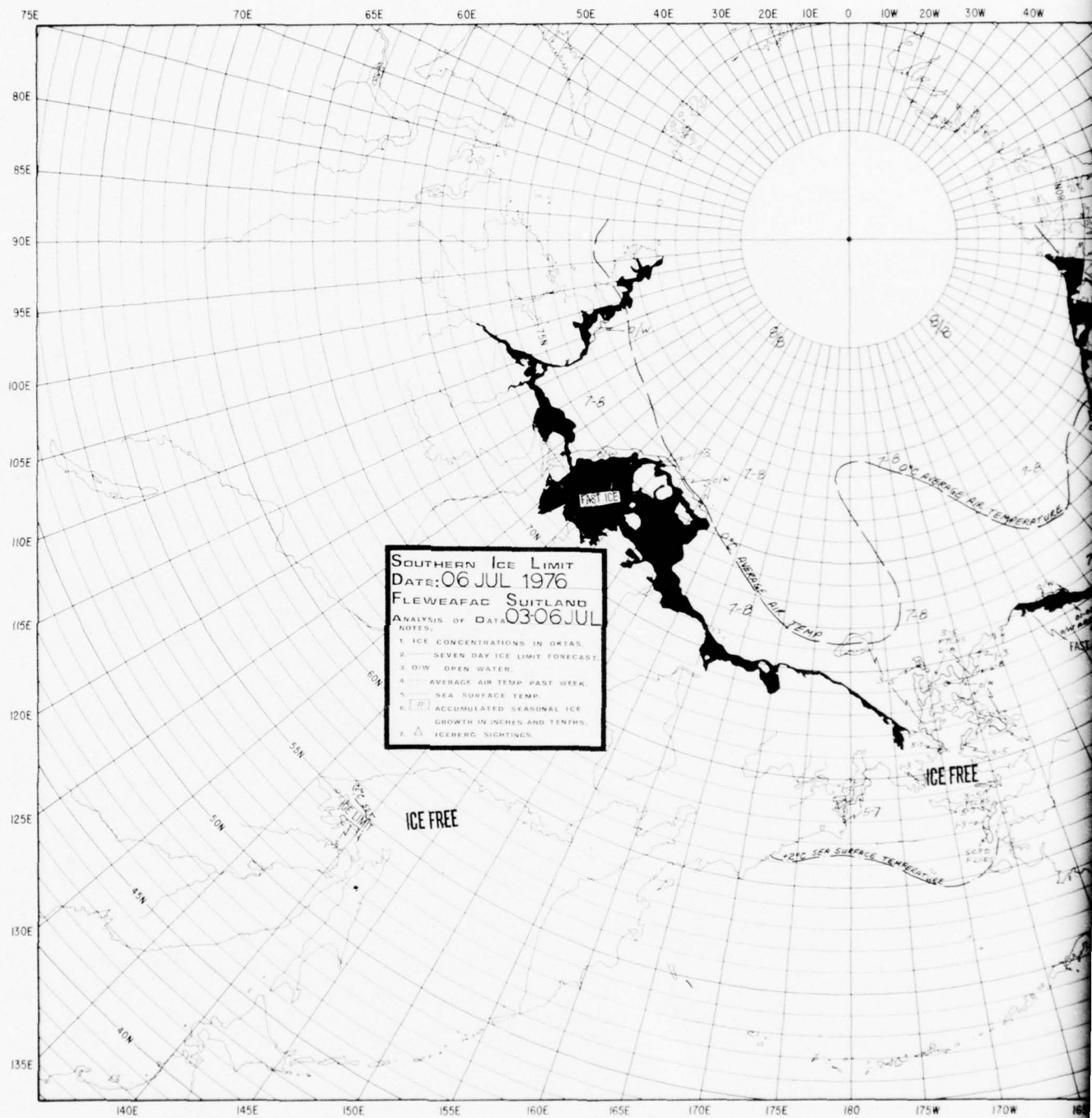






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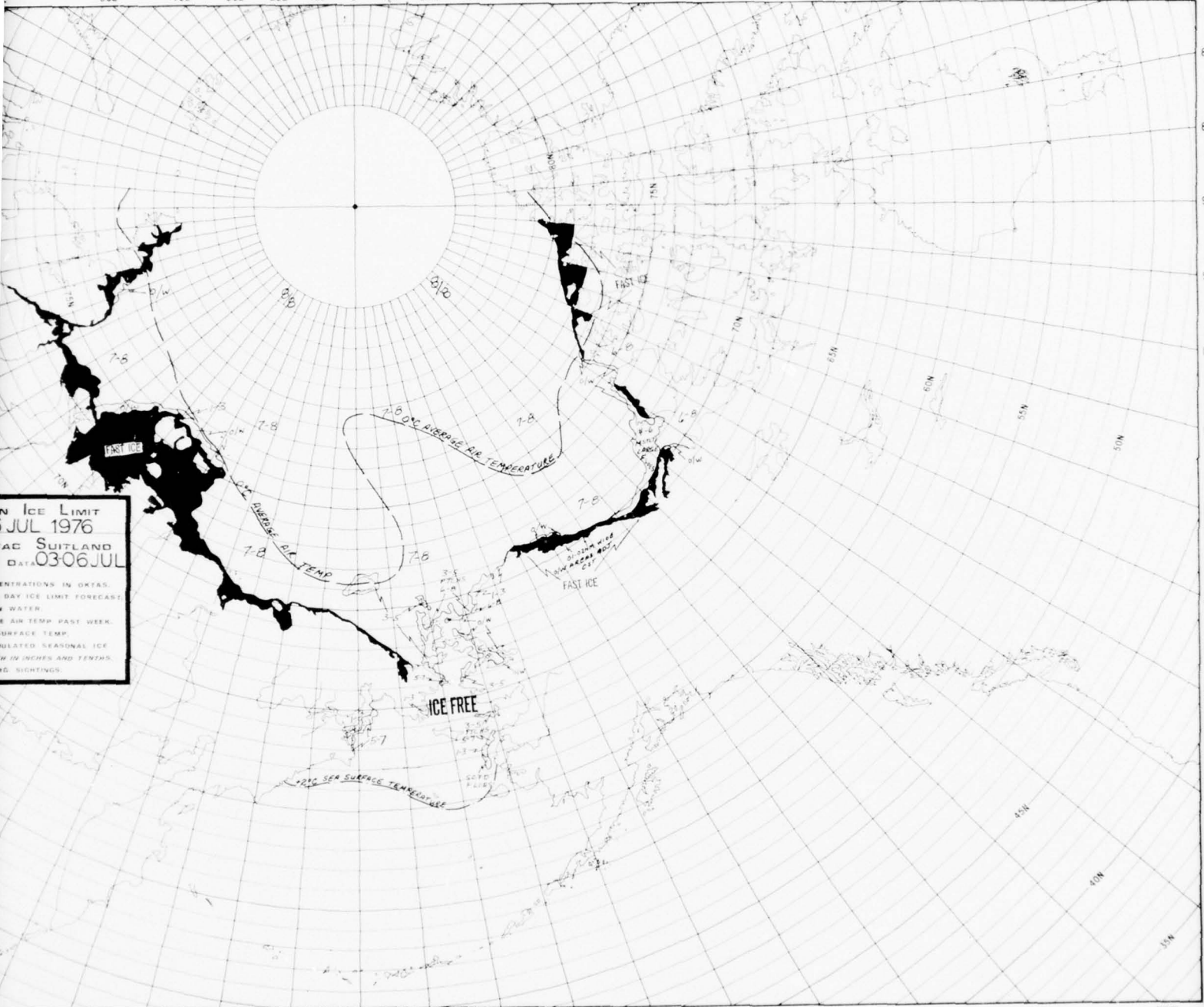


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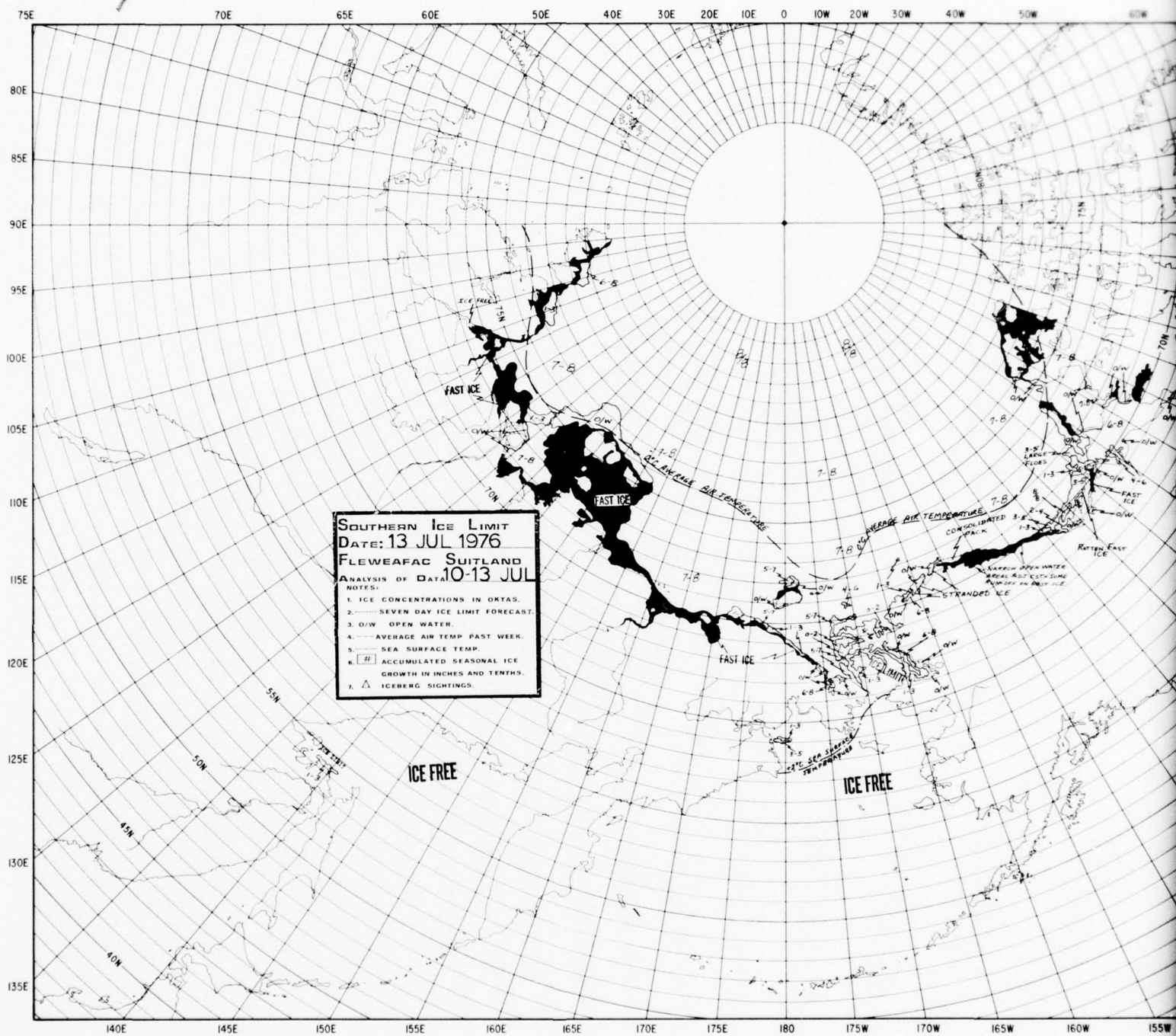
50E 40E 30E 20E 10E 0 10W 20W 30W 40W 50W 60W 65W 70W 75W

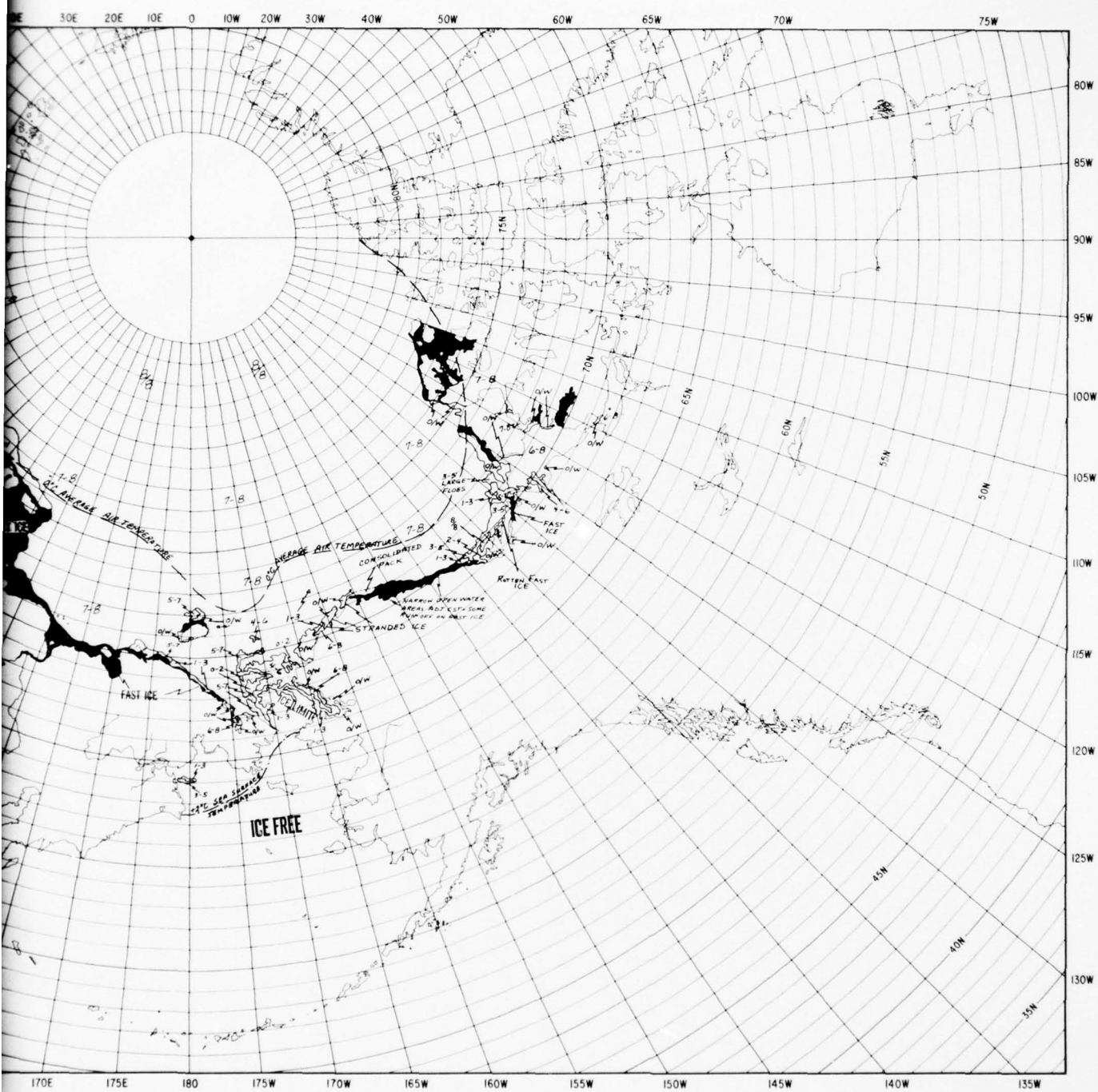
80W
85W
90W
95W
100W
105W
110W
115W
120W
125W
130W

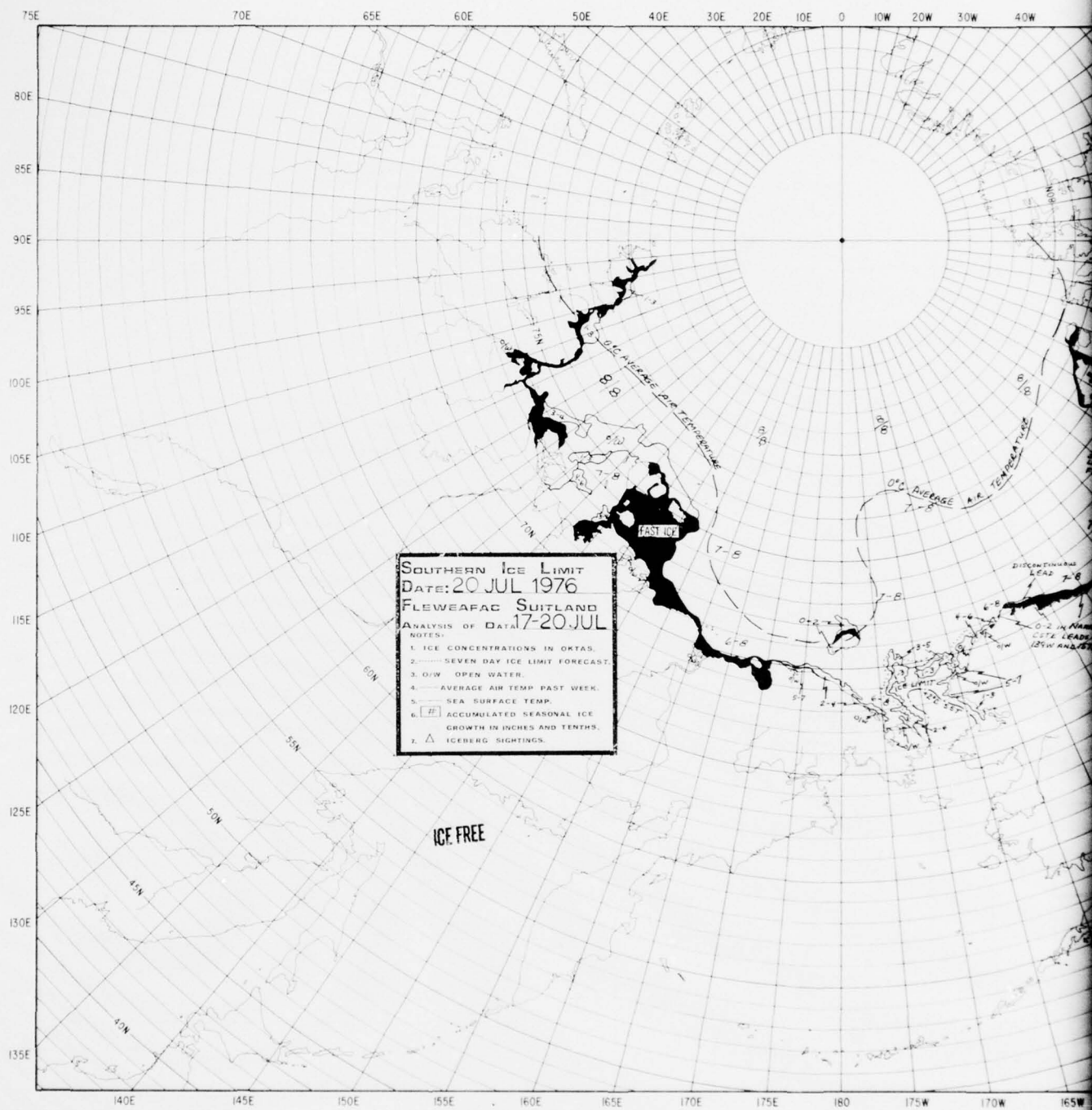
160E 165E 170E 175E 180 175W 170W 165W 160W 155W 150W 145W 140W 135W

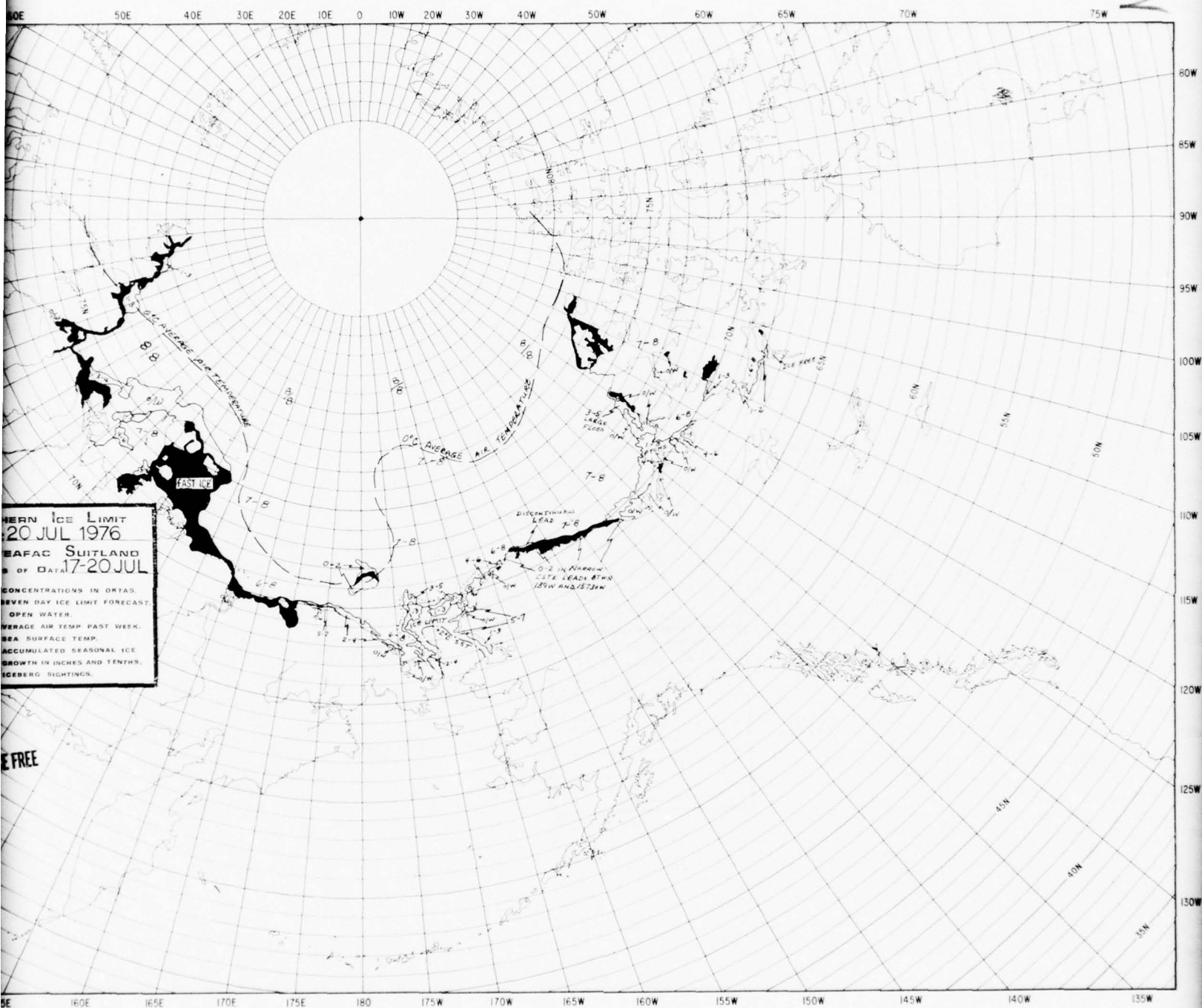


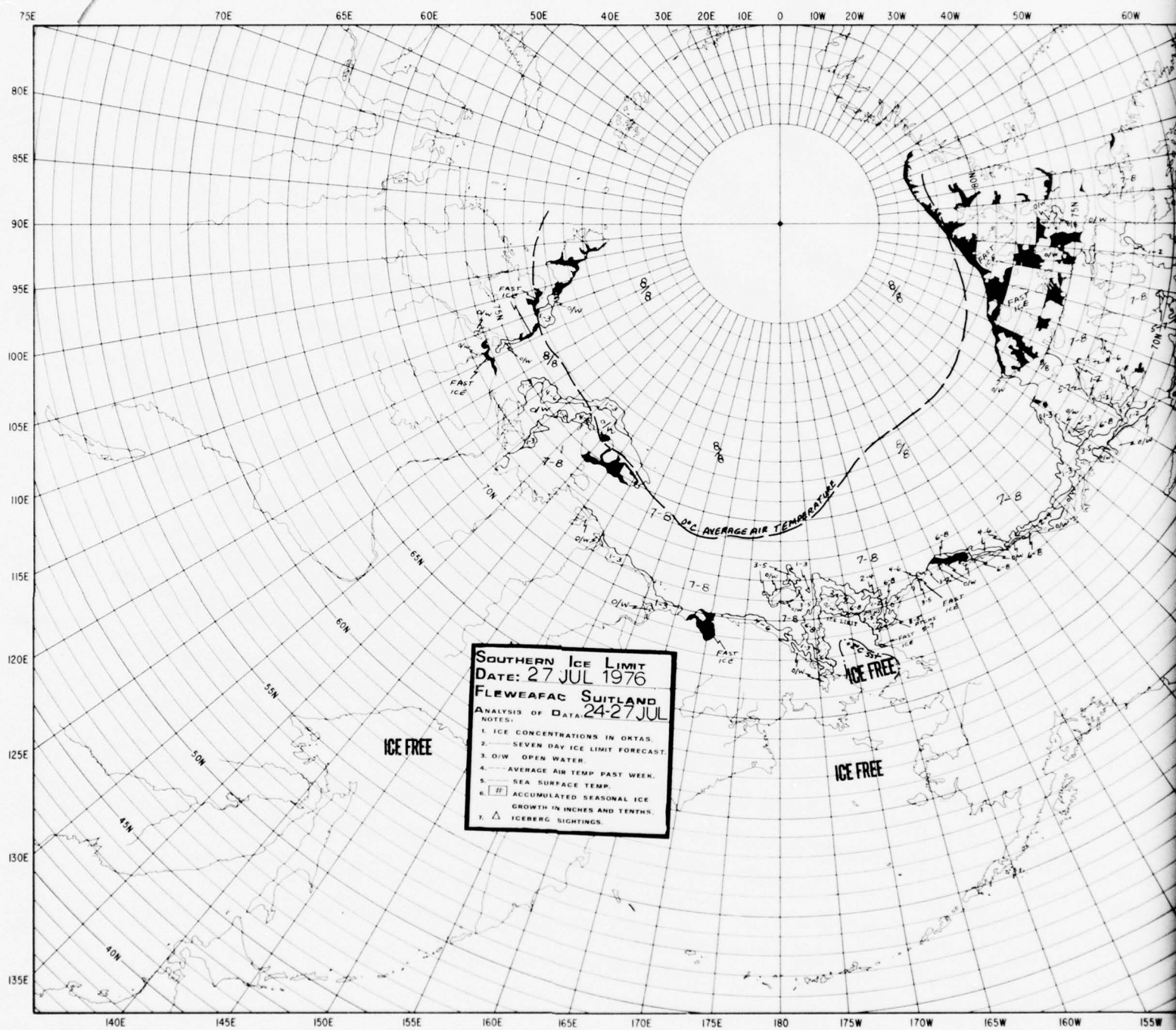
N Ice Limit
JUL 1976
FAC SUITLAND
DATA 03-06JUL
CONCENTRATIONS IN OKTAS
DAY ICE LIMIT FORECAST
WATER
SE AIR TEMP PAST WEEK
SURFACE TEMP
MULTIPLYED SEASONAL ICE
TH IN INCHES AND TENTHS
AND SIGHTINGS



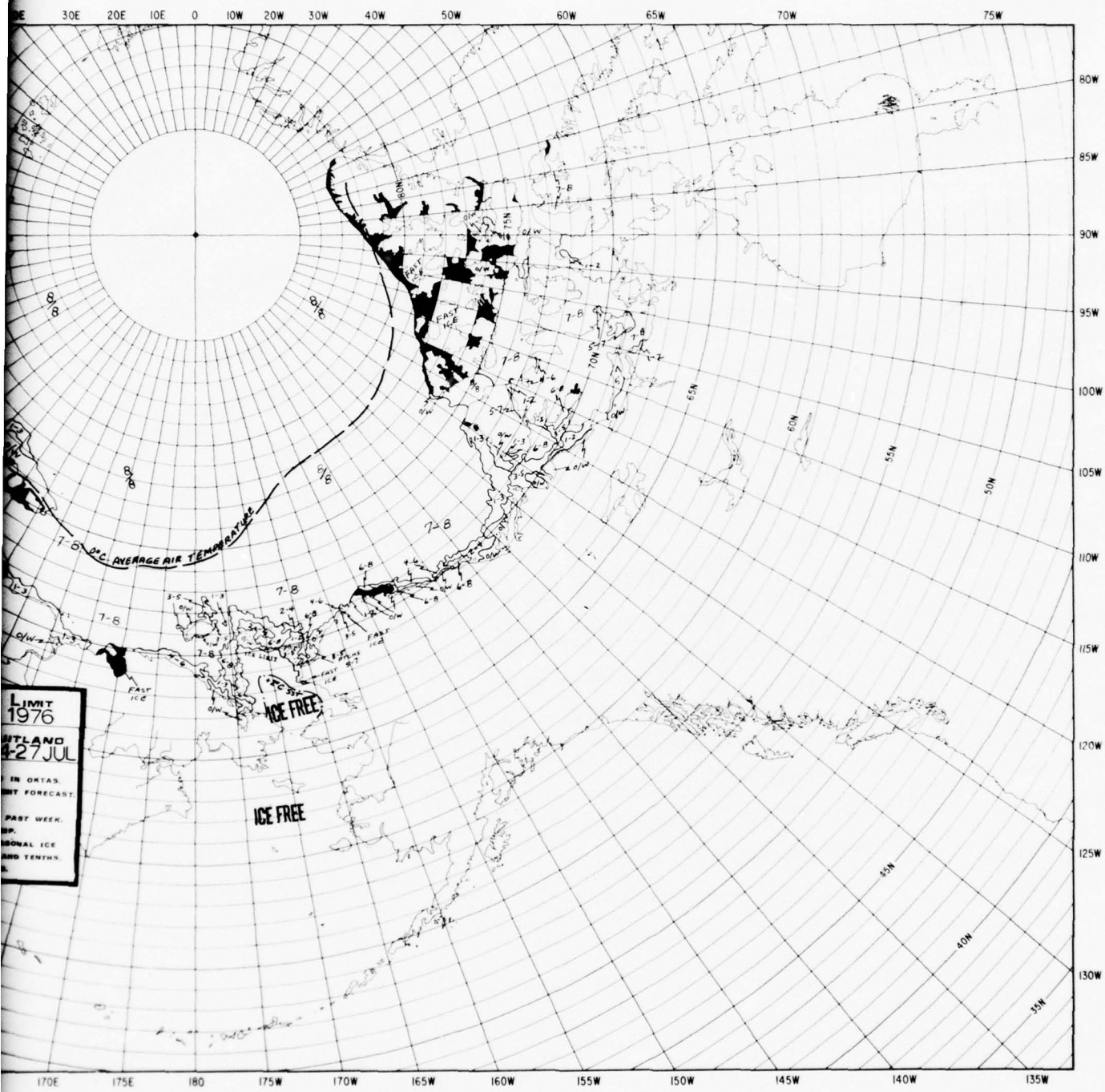




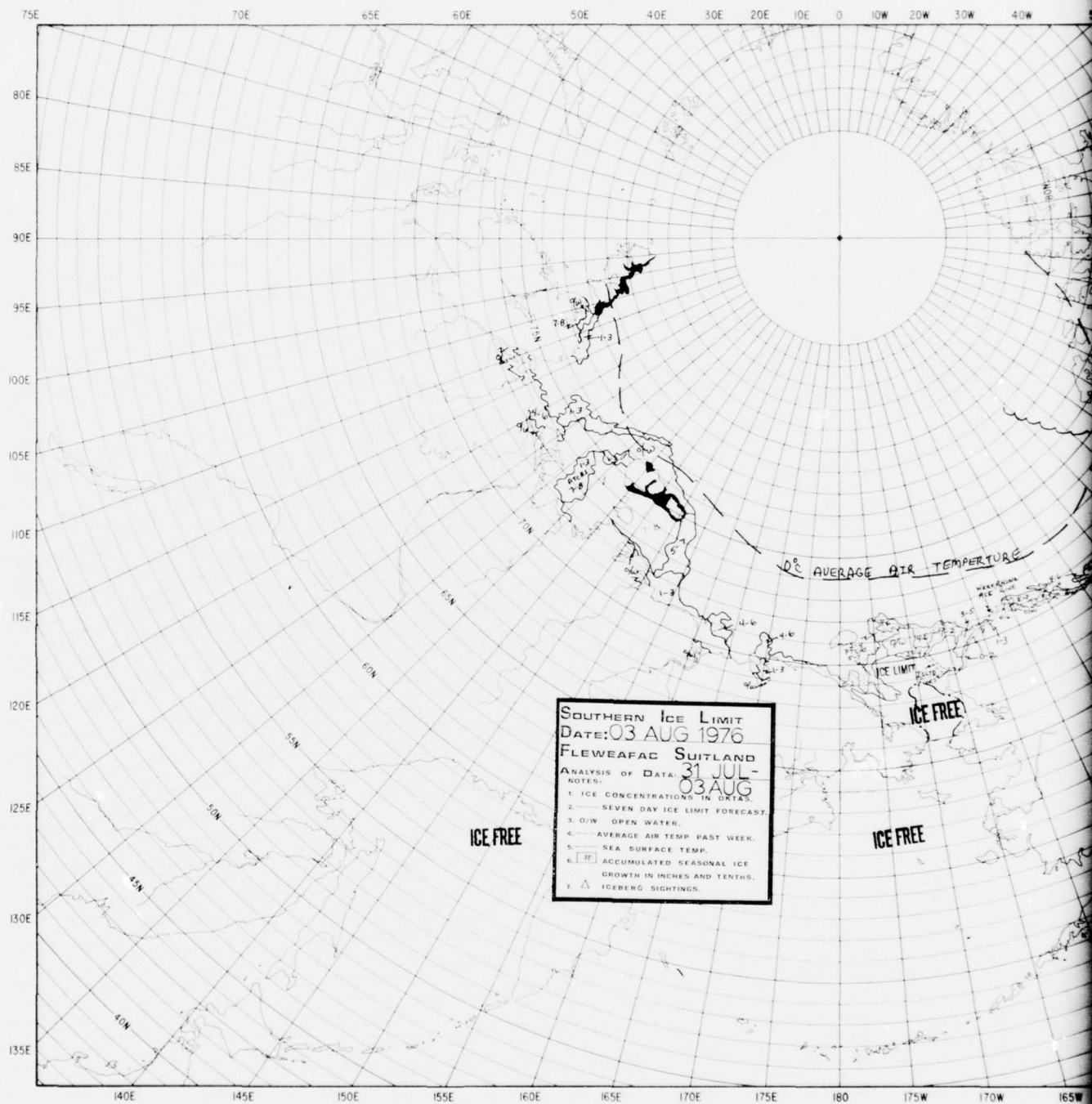




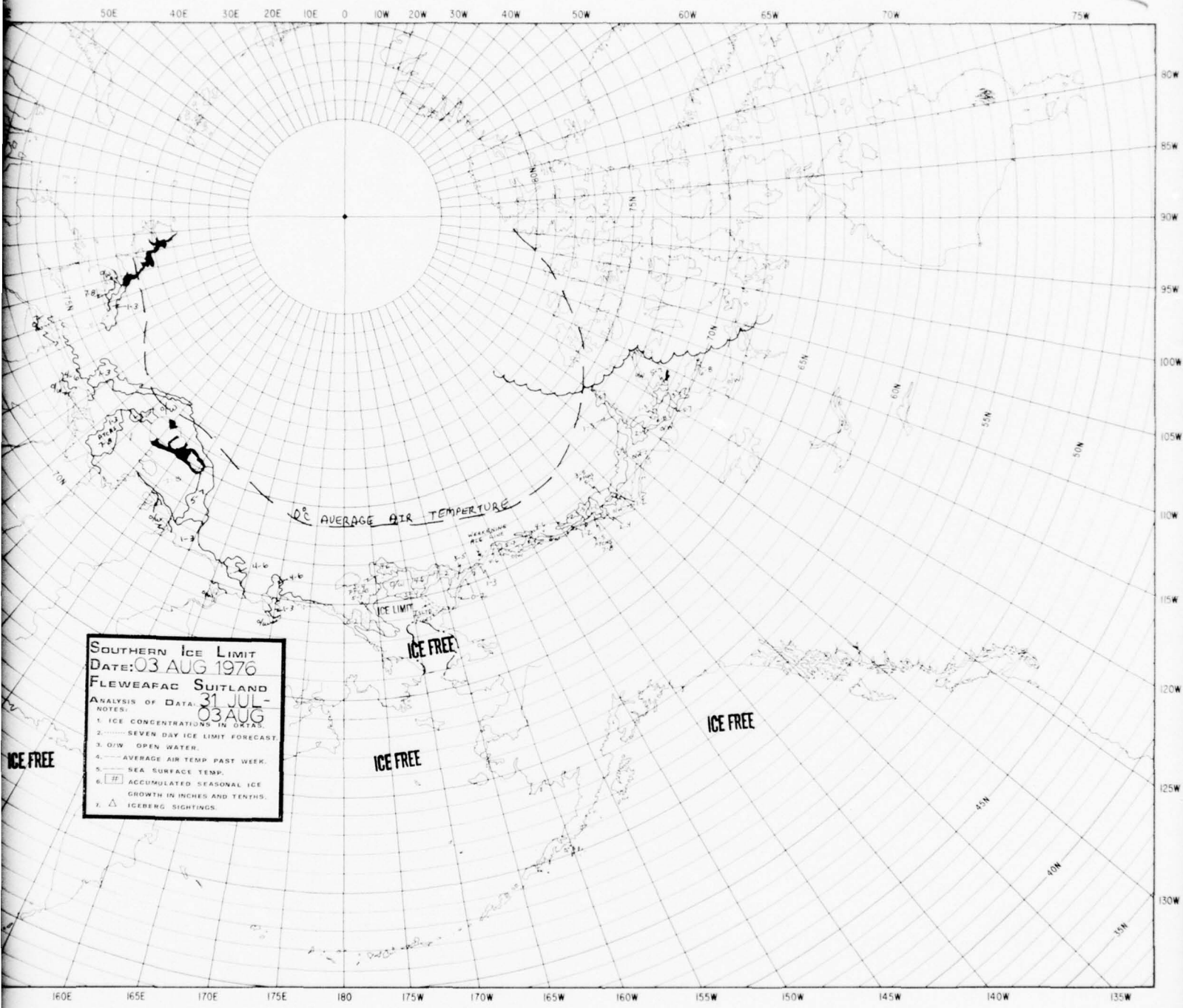
2



LIMIT
1976
ATLAND
4-27 JUL
IN ORTAS
LIMIT FORECAST
PAST WEEK
SP.
REGIONAL ICE
AND TENTH
N.



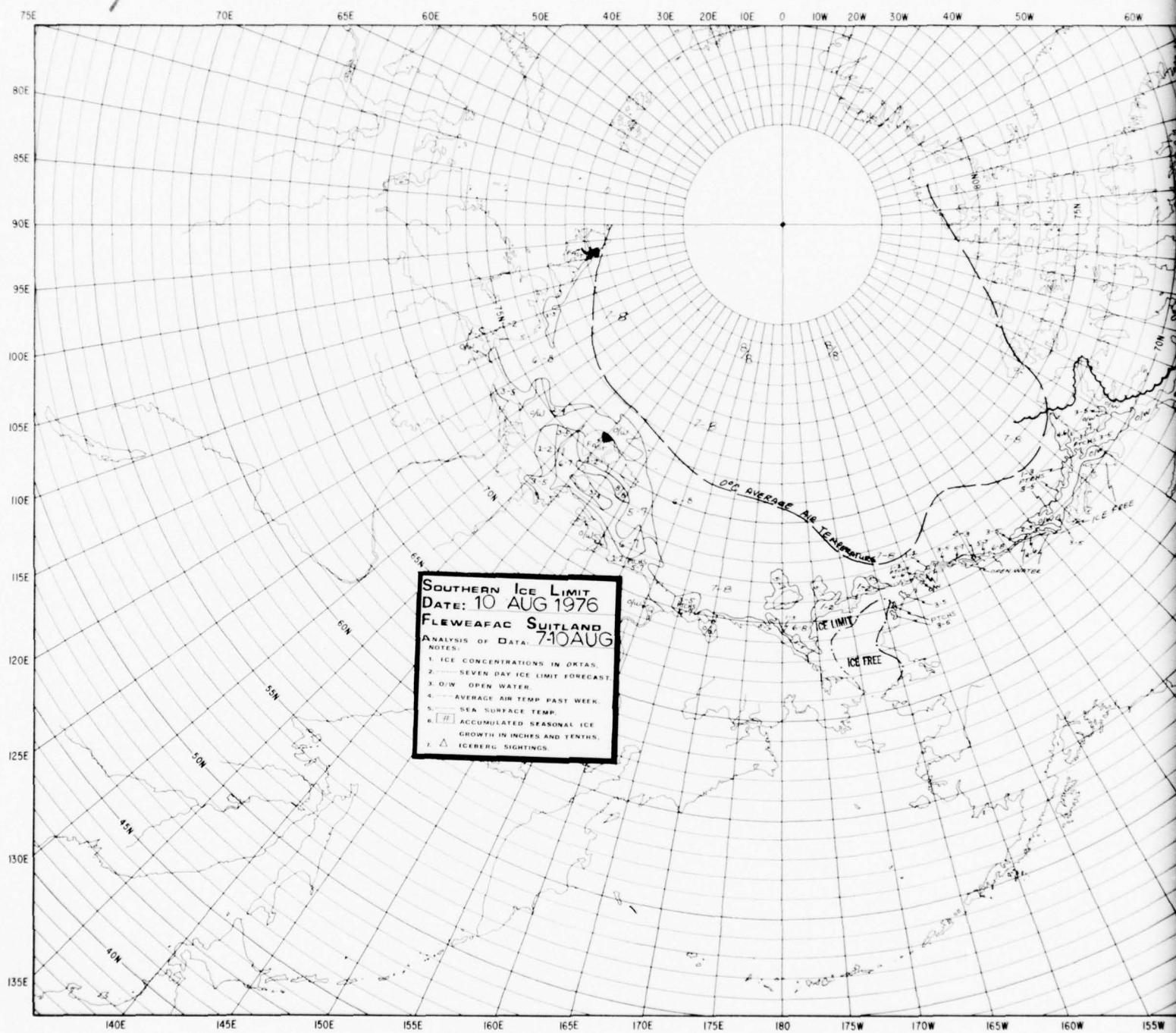
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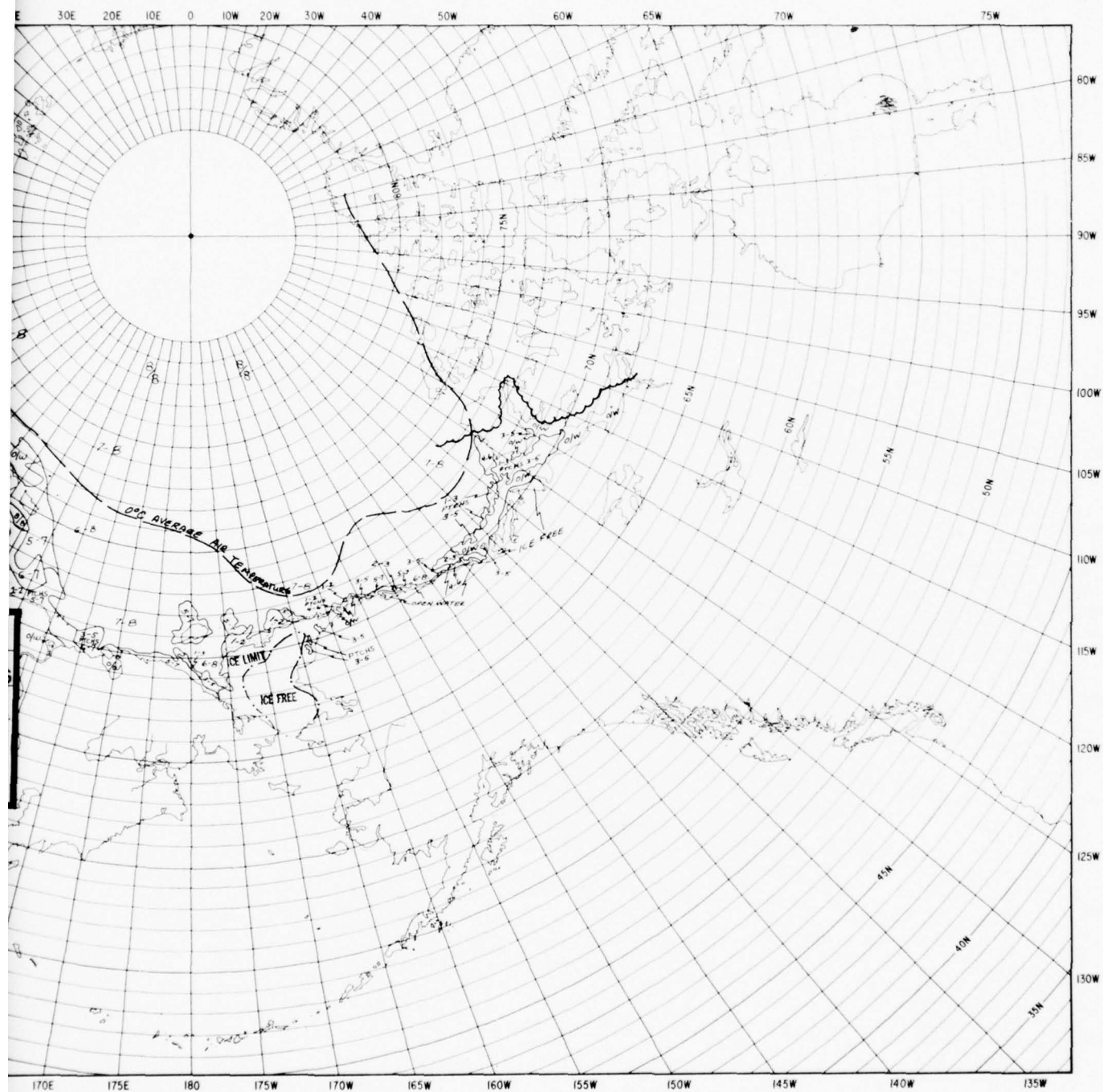


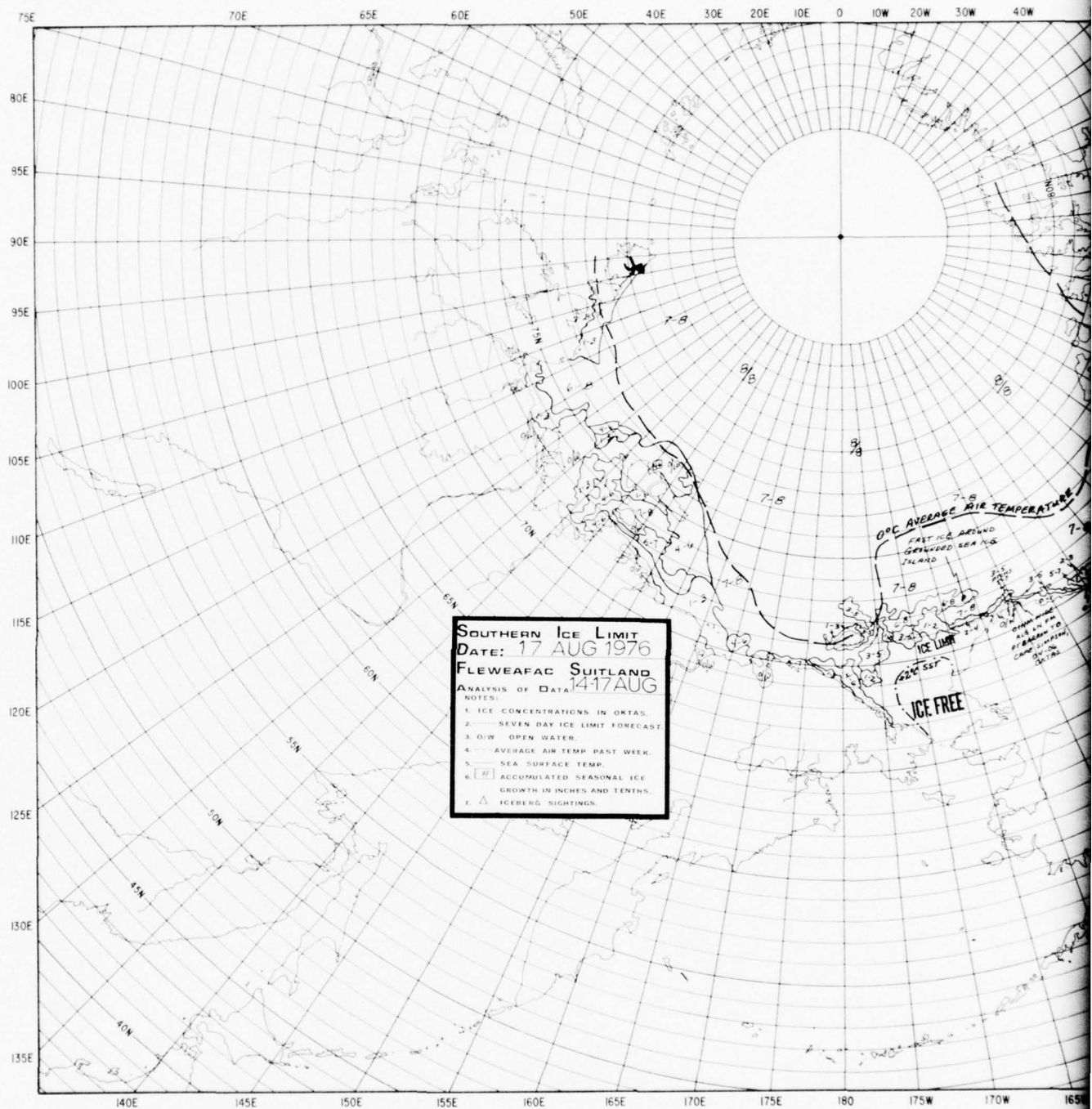
SOUTHERN Ice Limit
Date: 03 AUG 1976
FLEWEAFAC SUITLAND
Analysis of Data: 31 JUL - 03 AUG

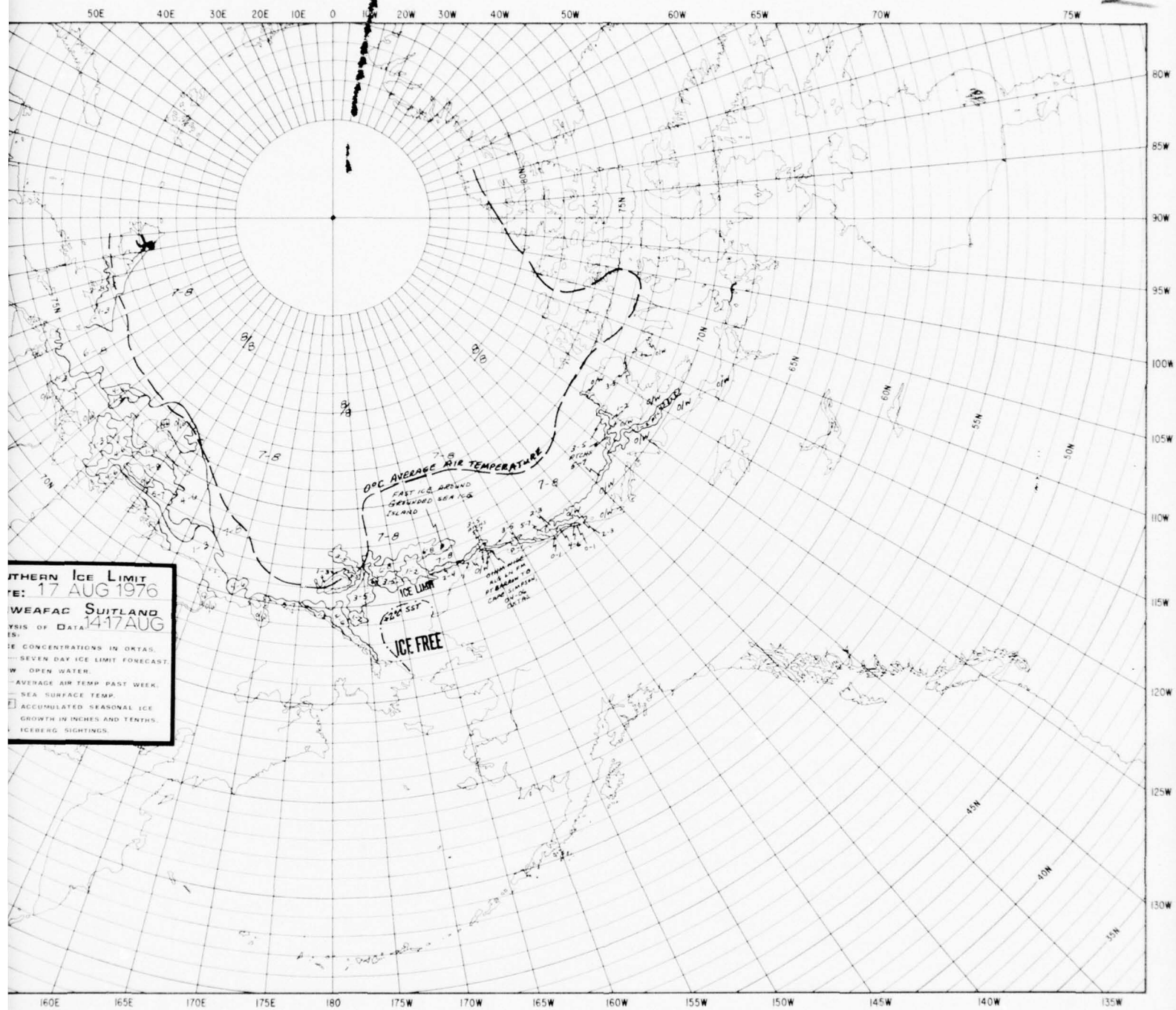
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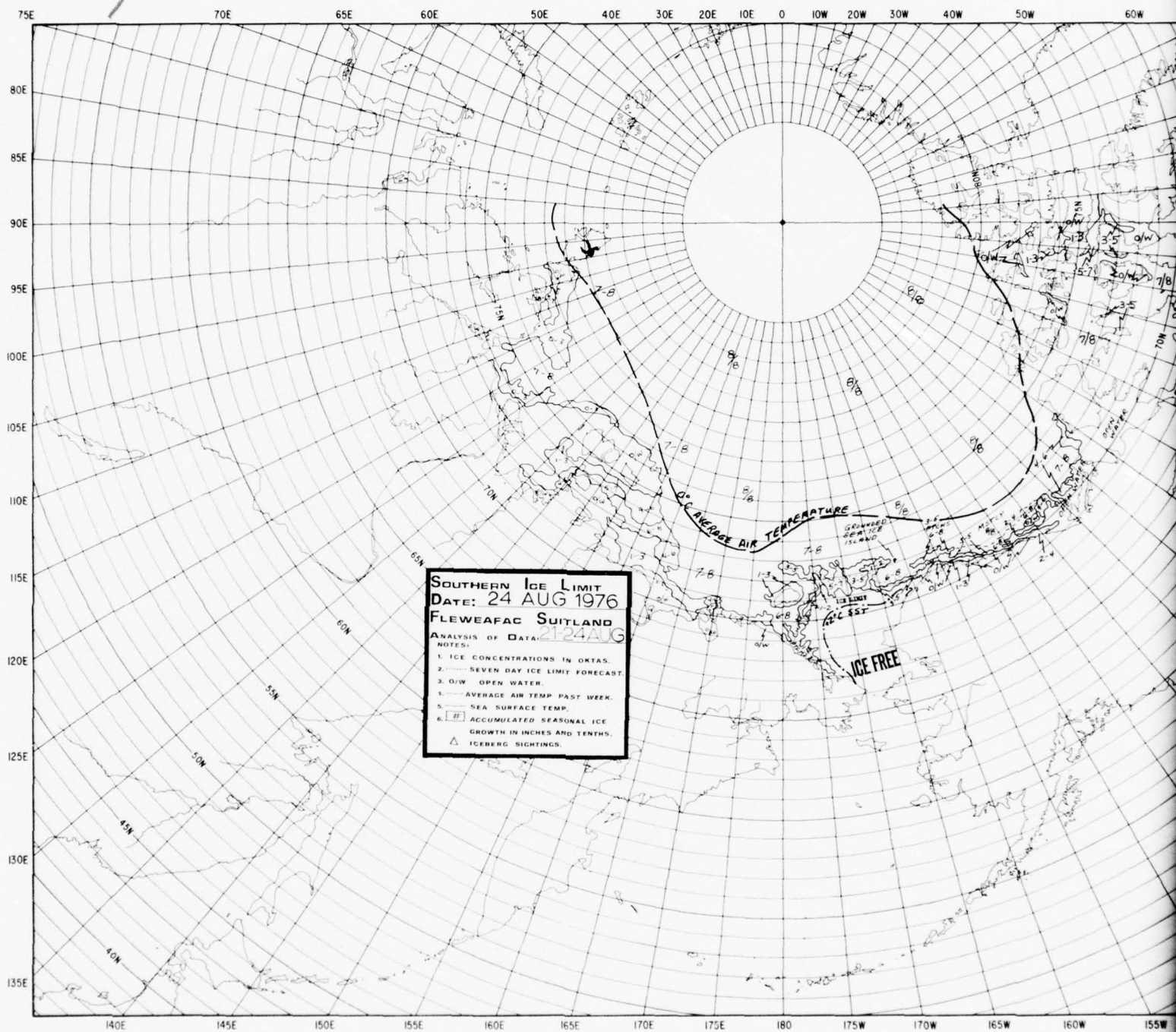
1. ICE CONCENTRATIONS IN OBTAS.
2. SEVEN DAY ICE LIMIT FORECAST.
3. O/W OPEN WATER.
4. AVERAGE AIR TEMP PAST WEEK.
5. SEA SURFACE TEMP.
6. ACCUMULATED SEASONAL ICE GROWTH IN INCHES AND TENTHS.
7. ICEBERG SIGHTINGS.

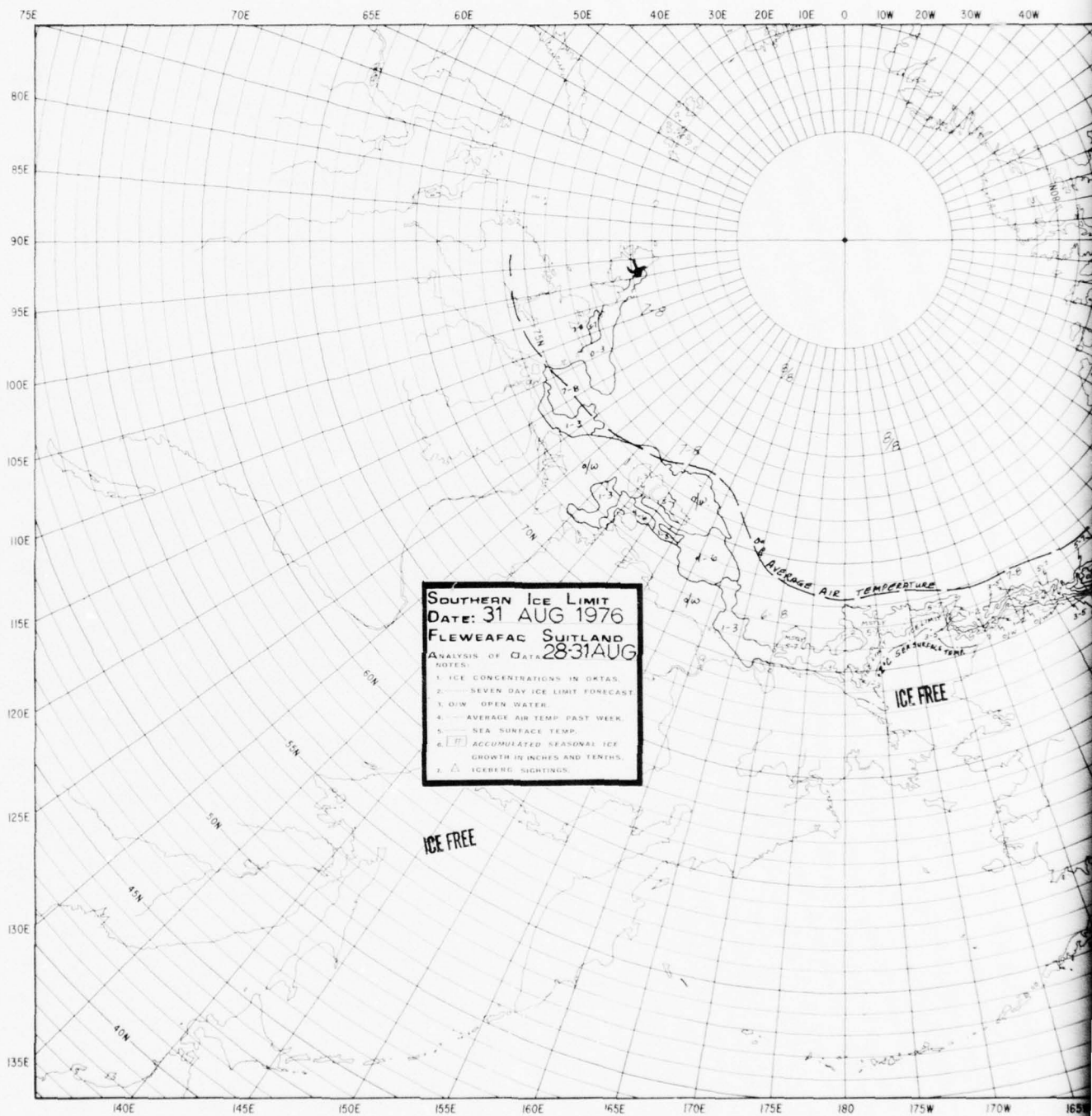


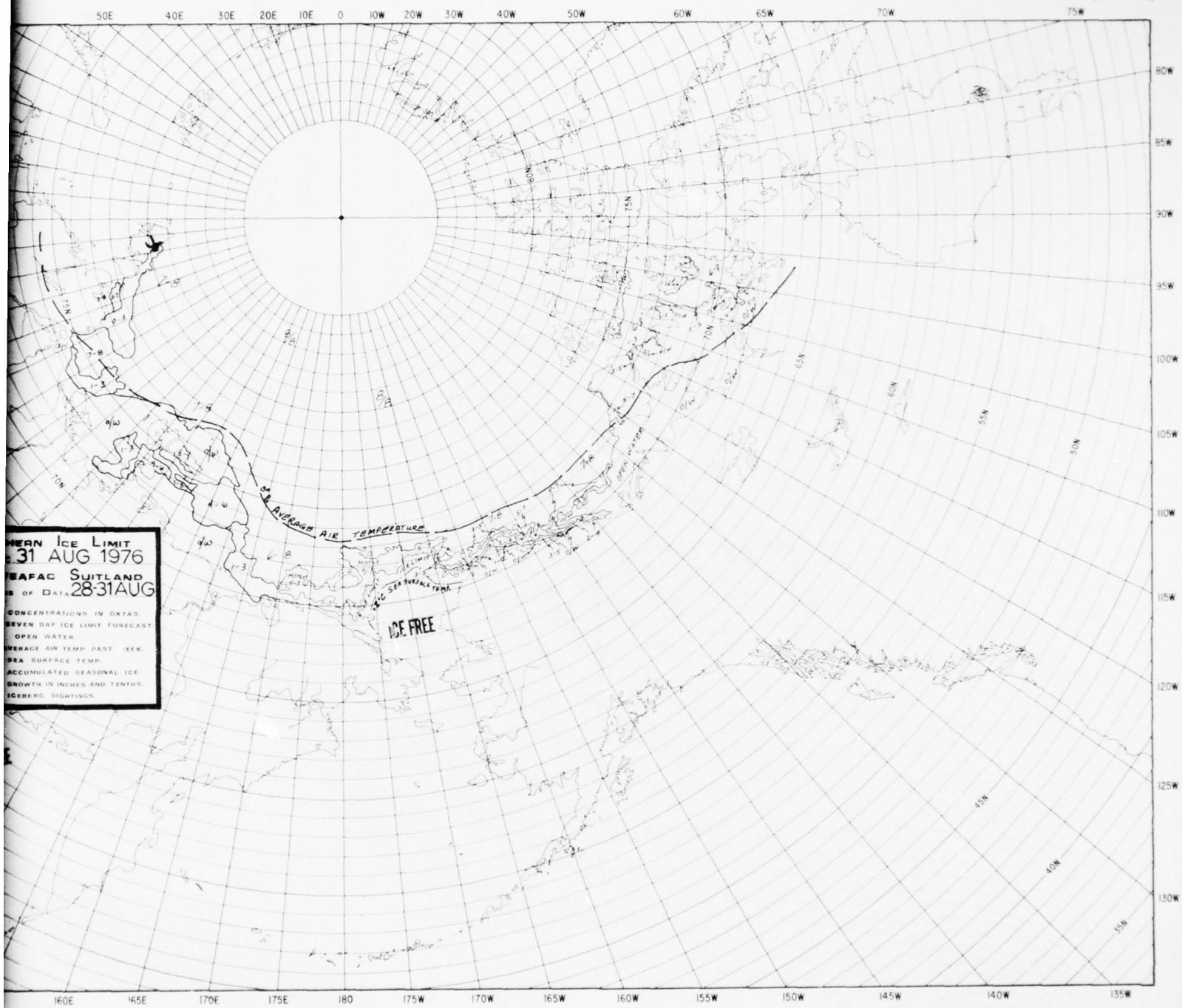


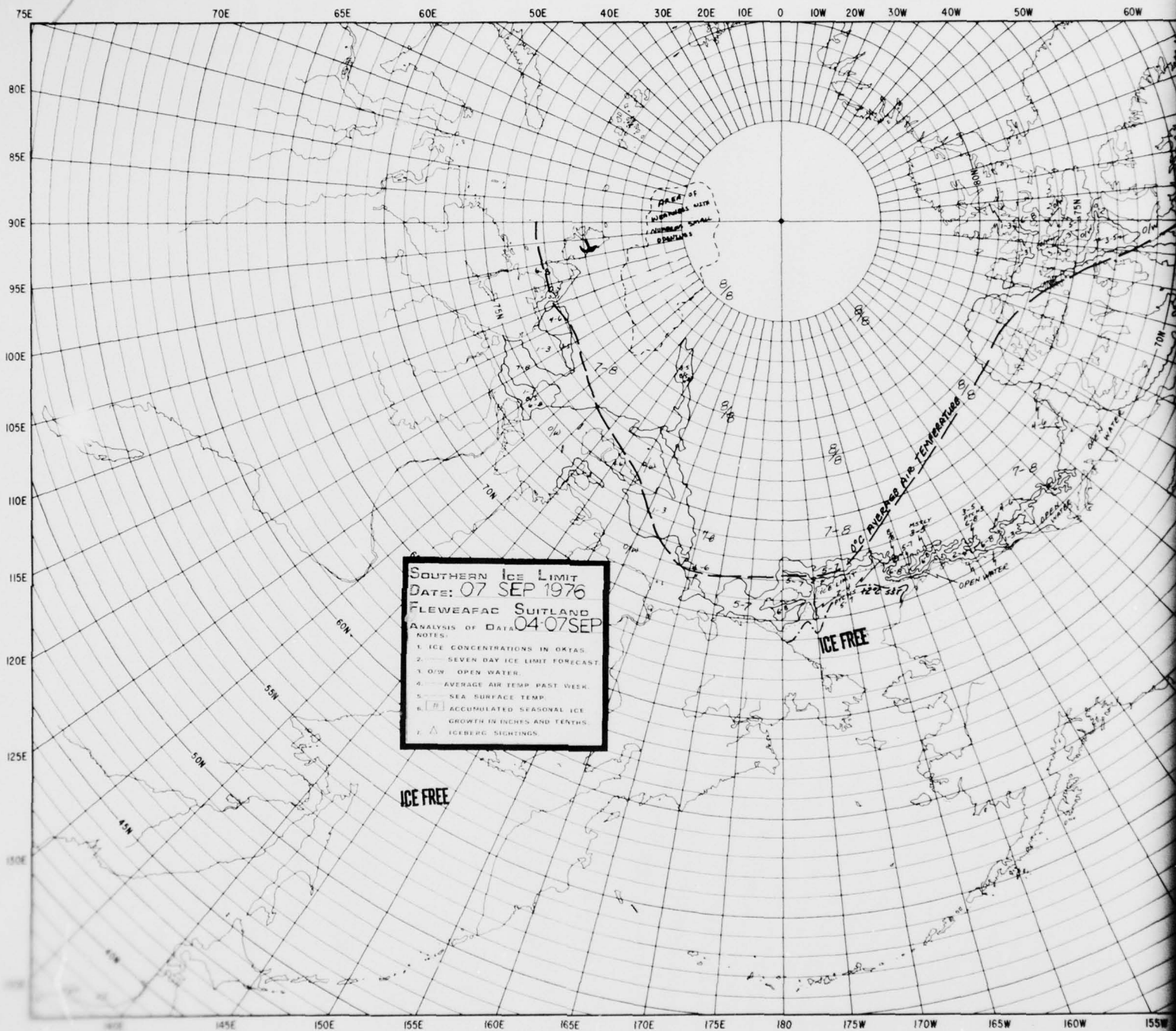




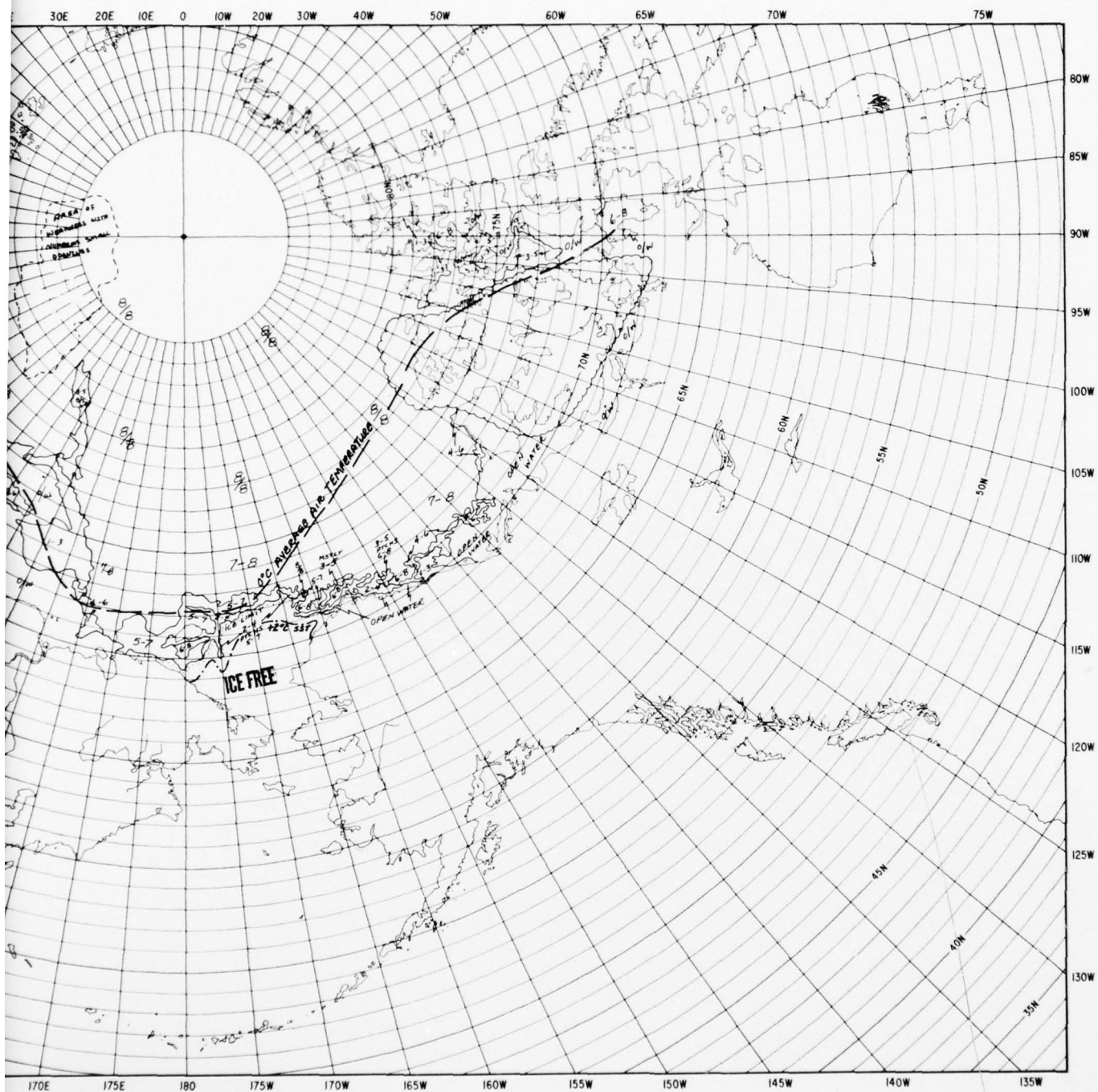


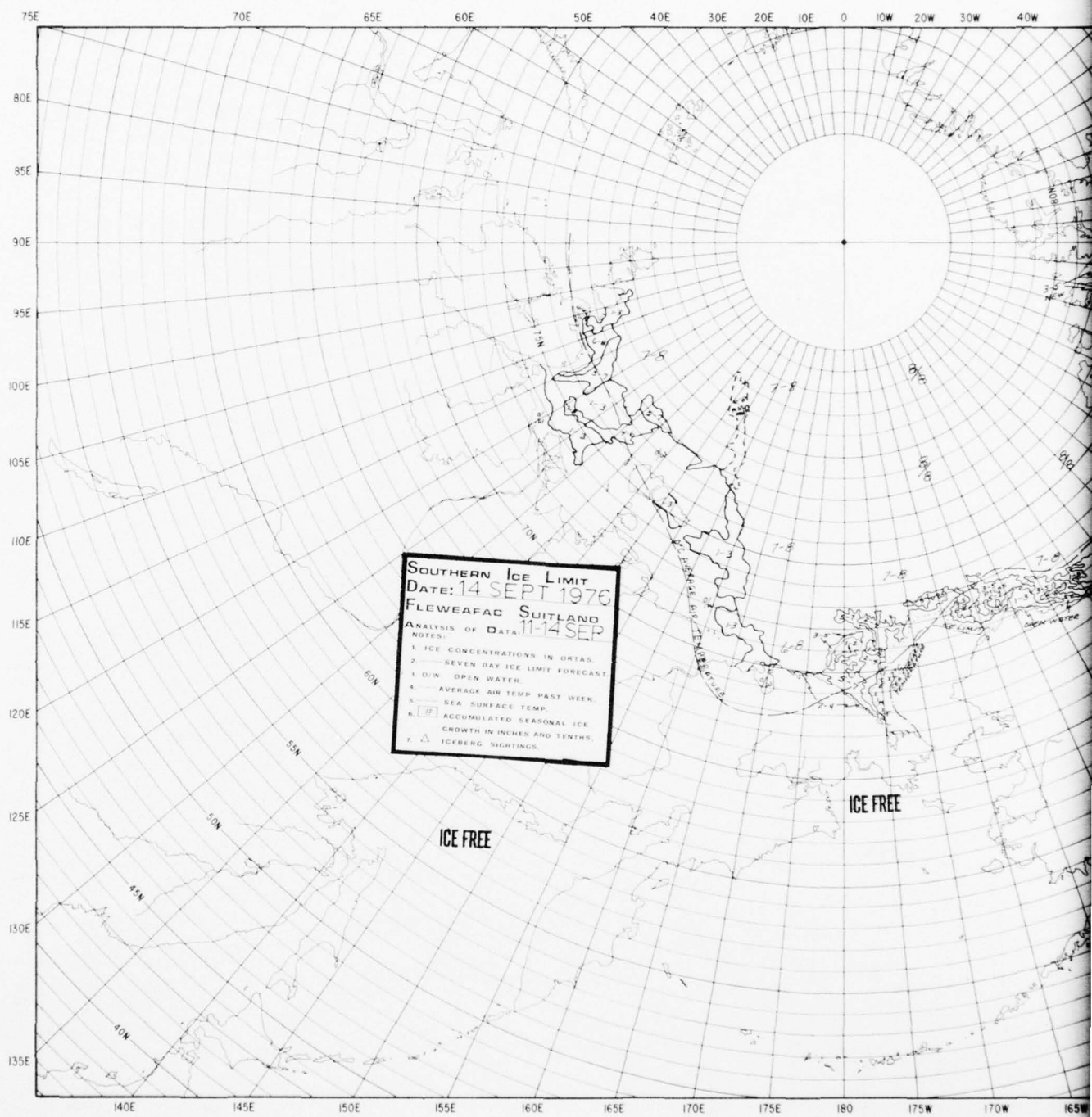


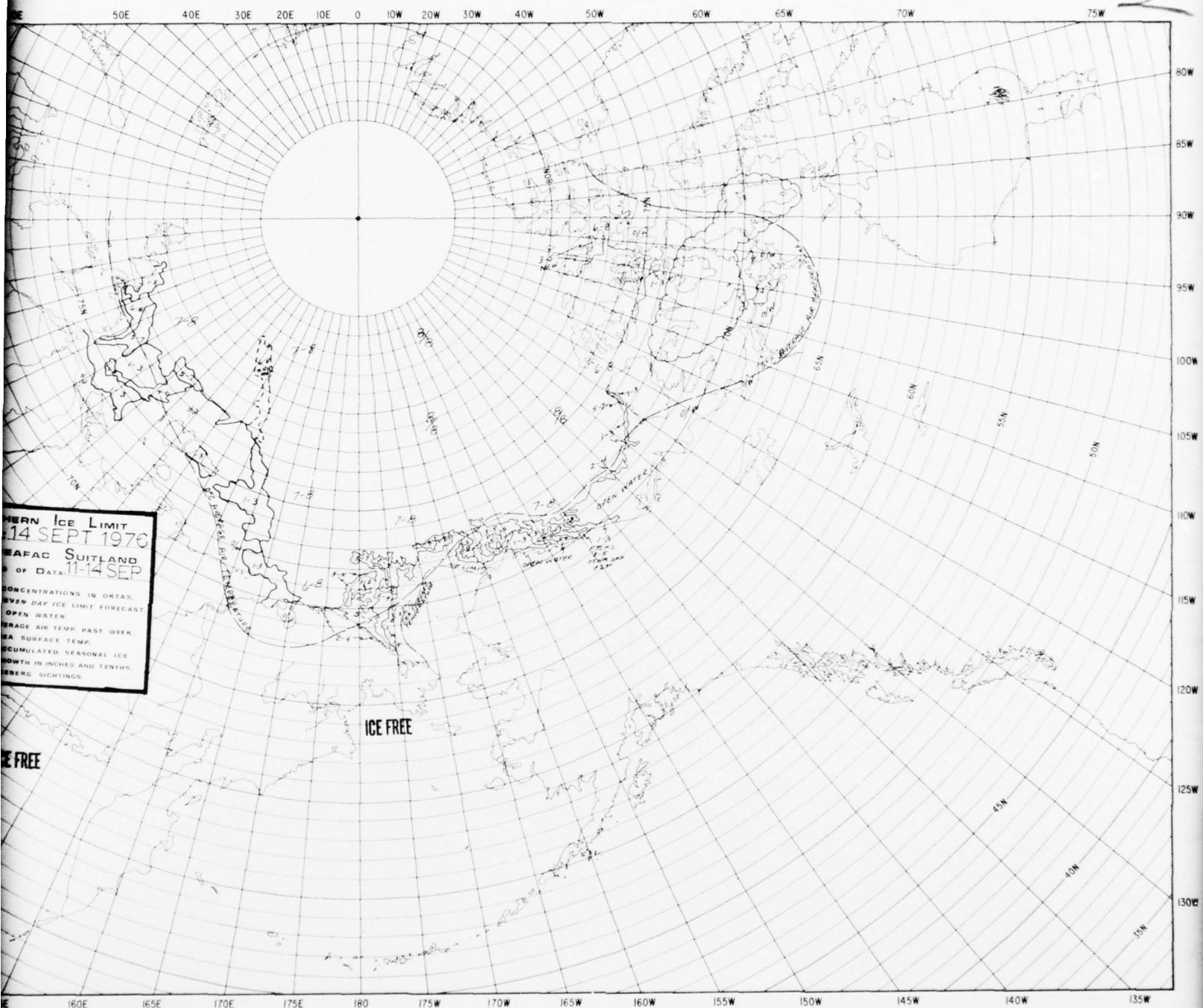


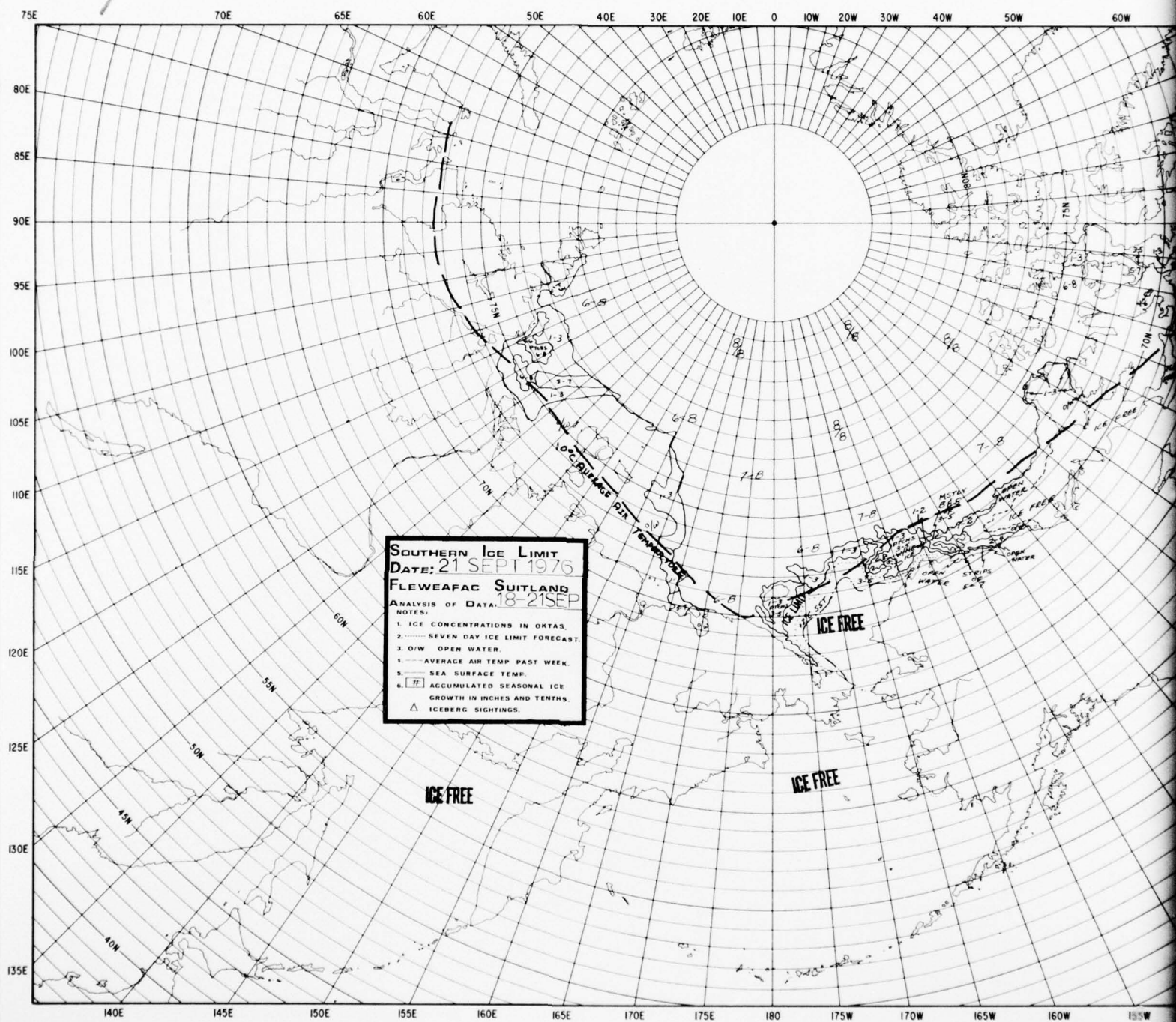


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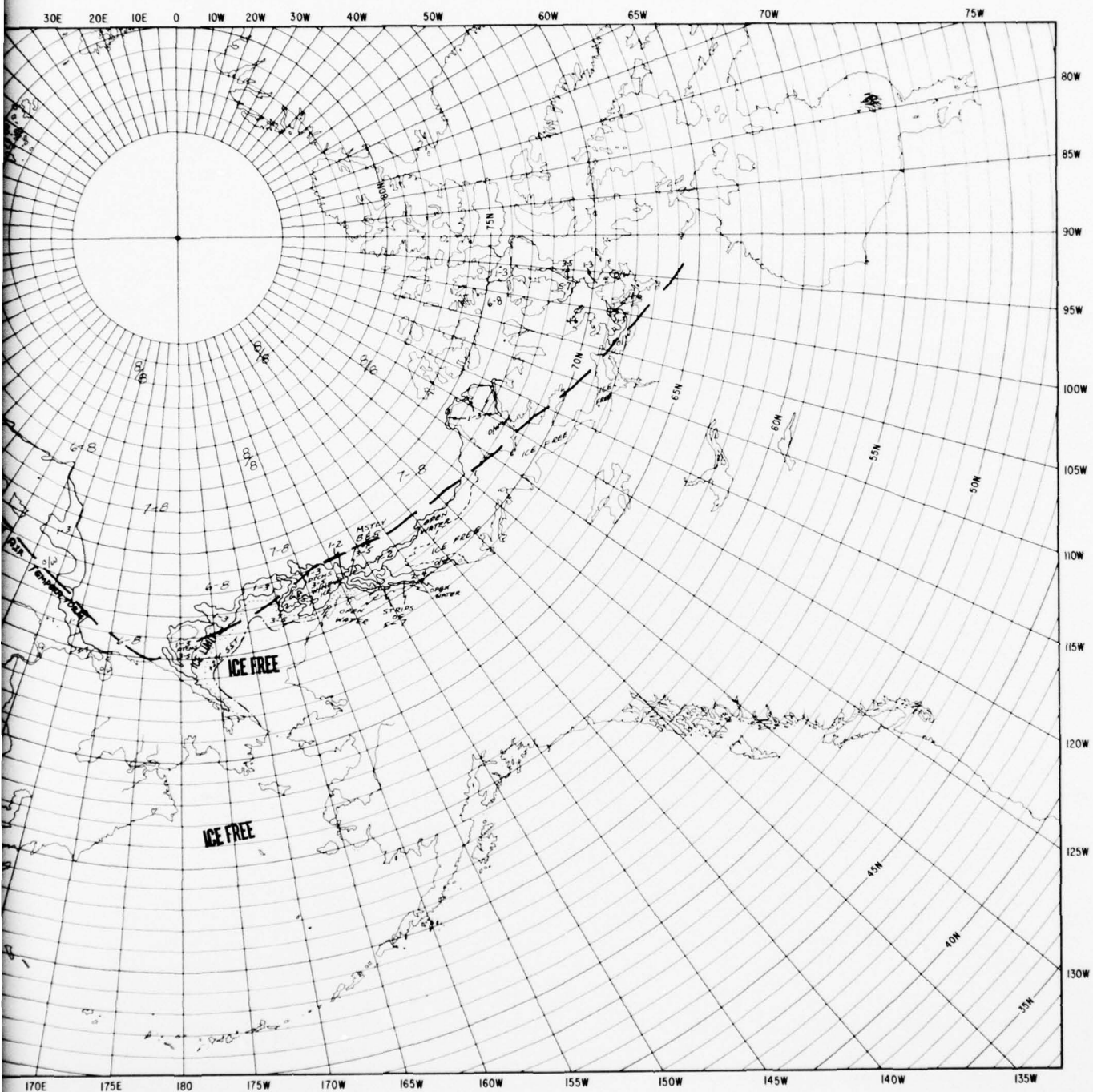


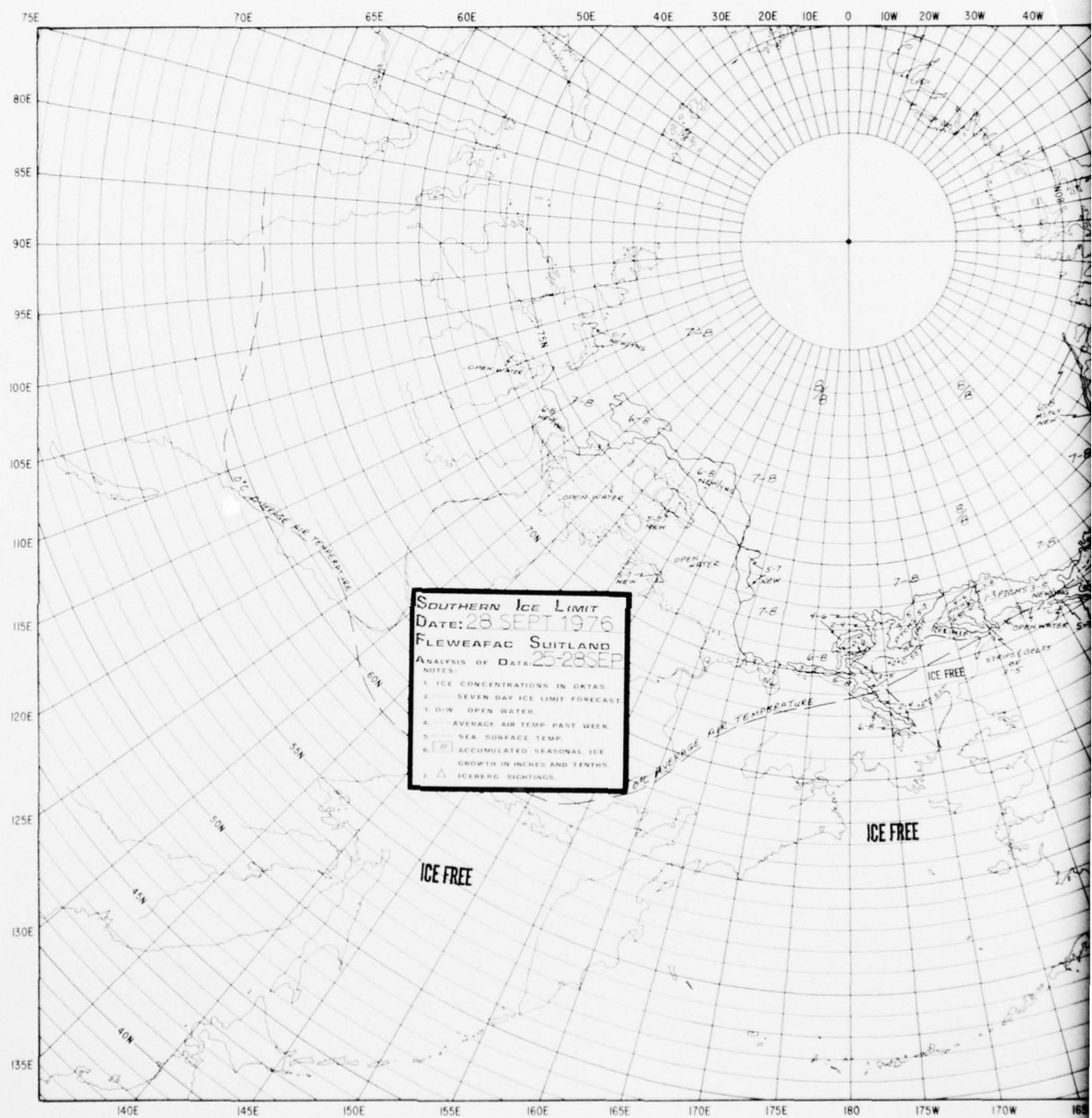


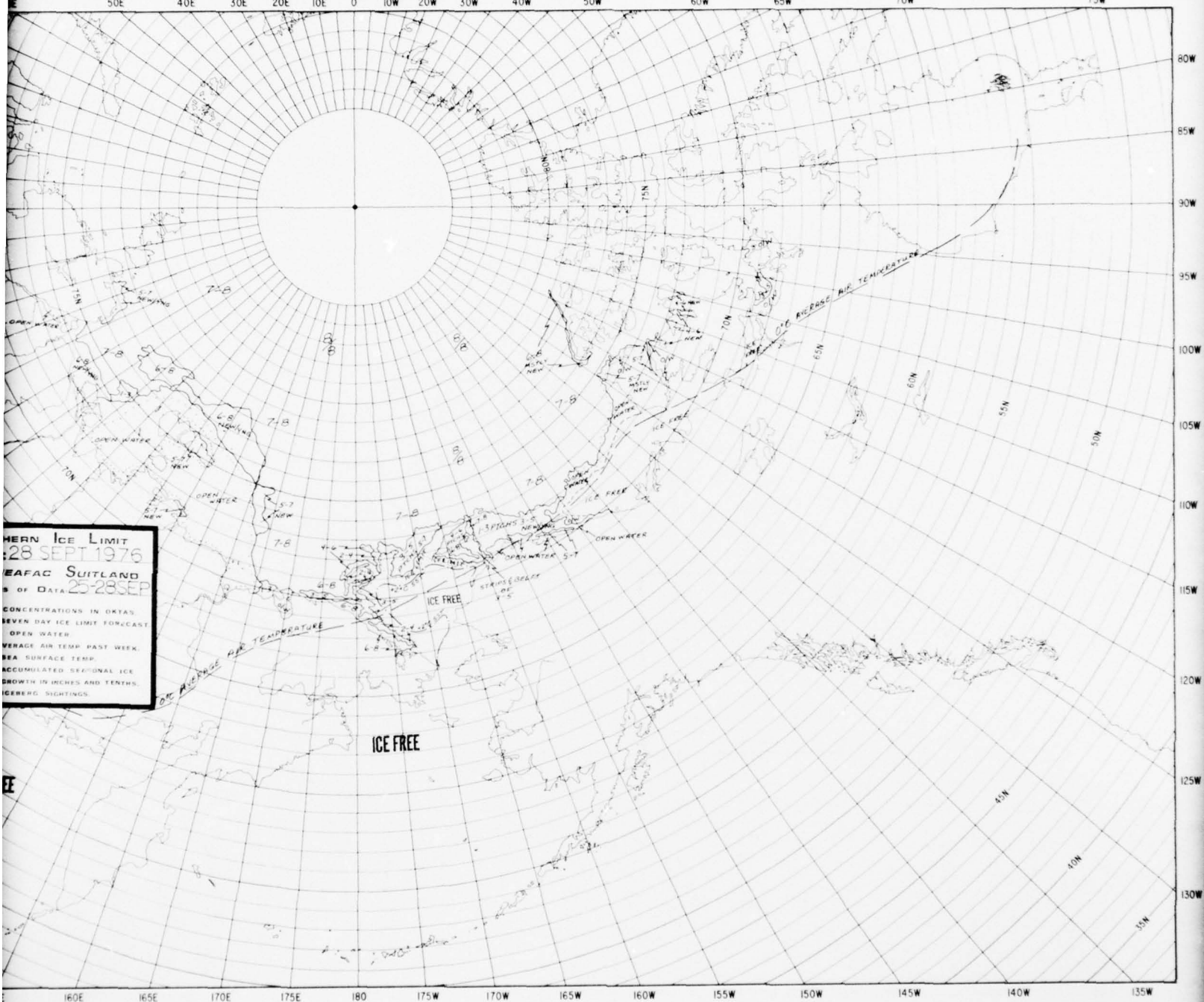


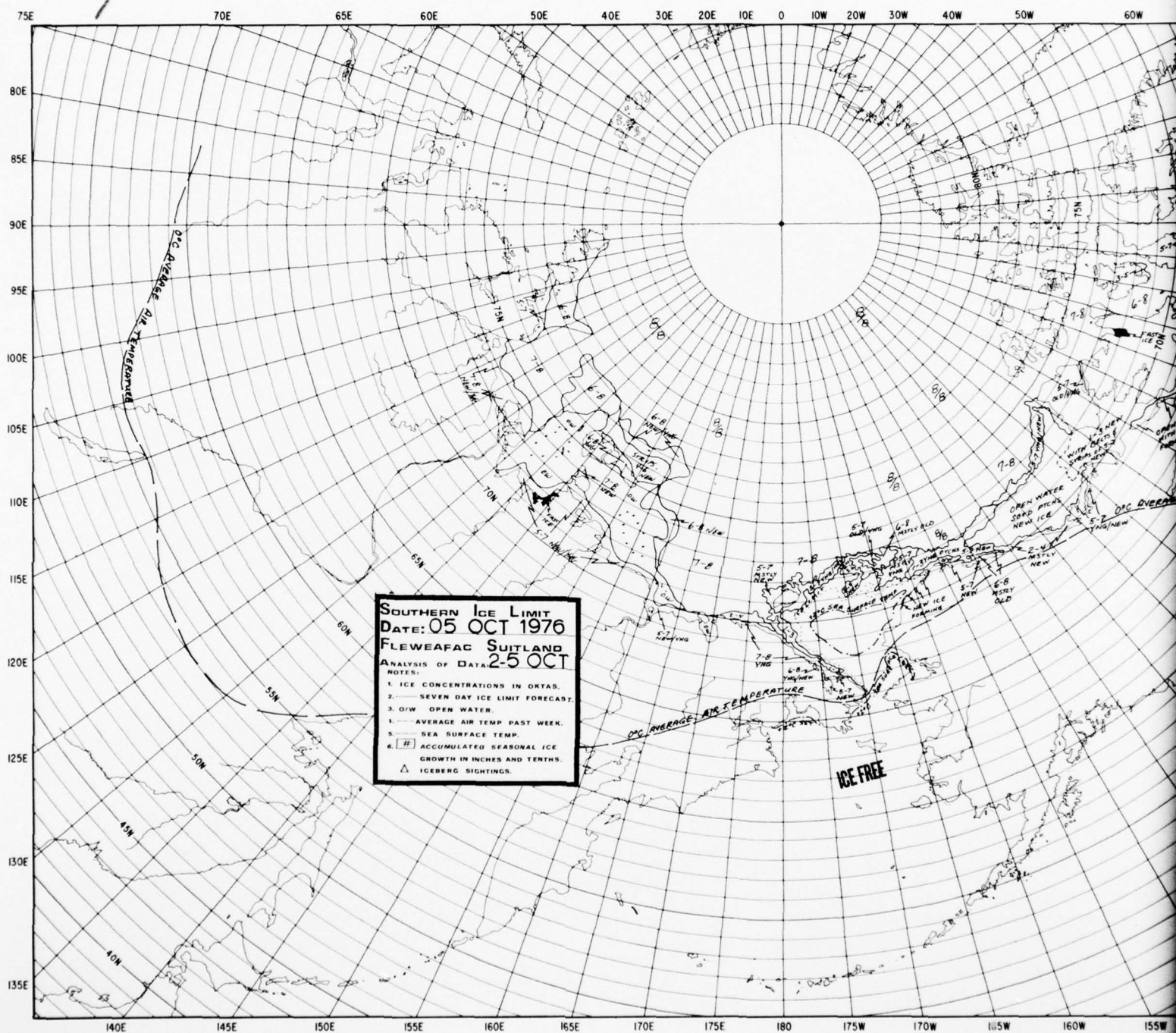


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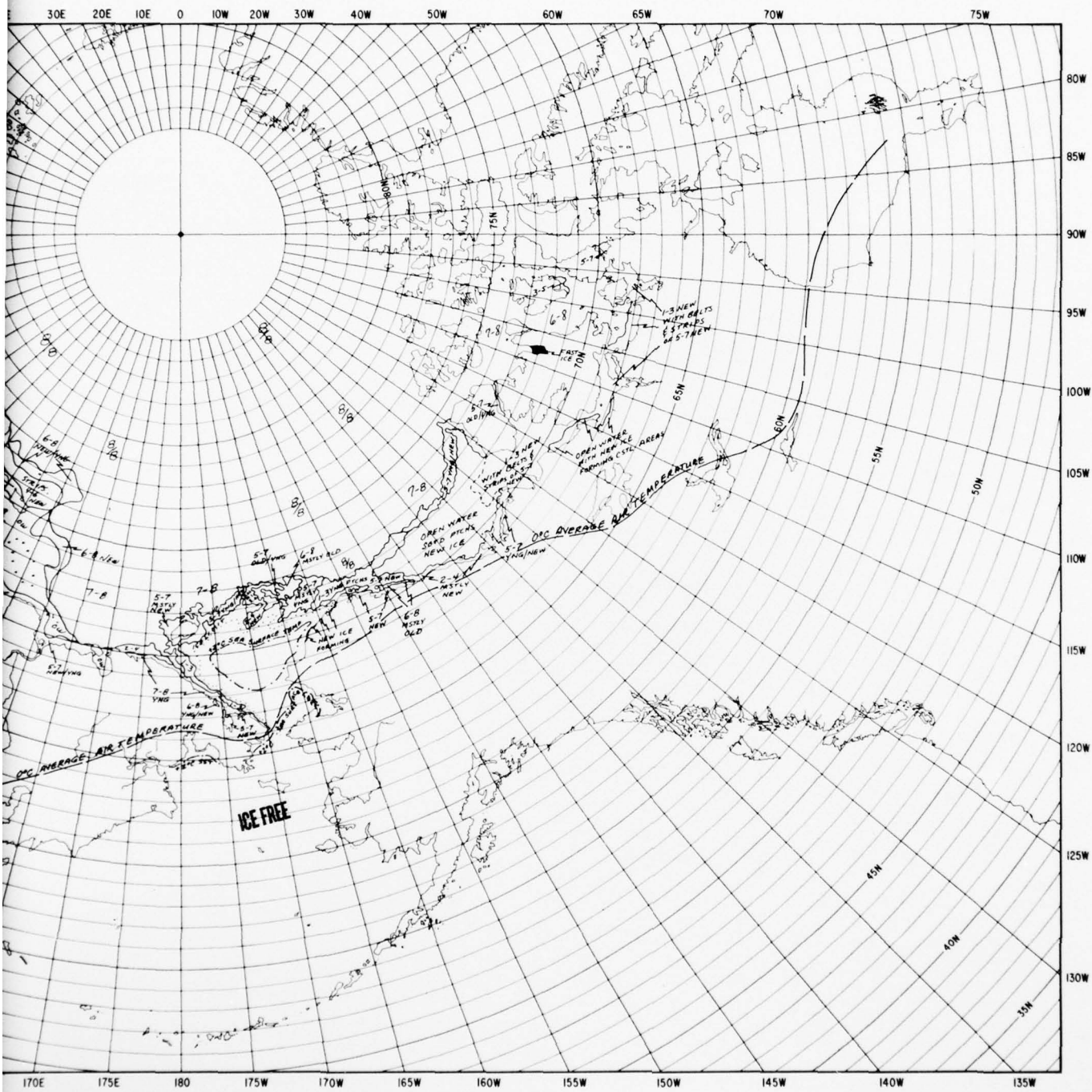


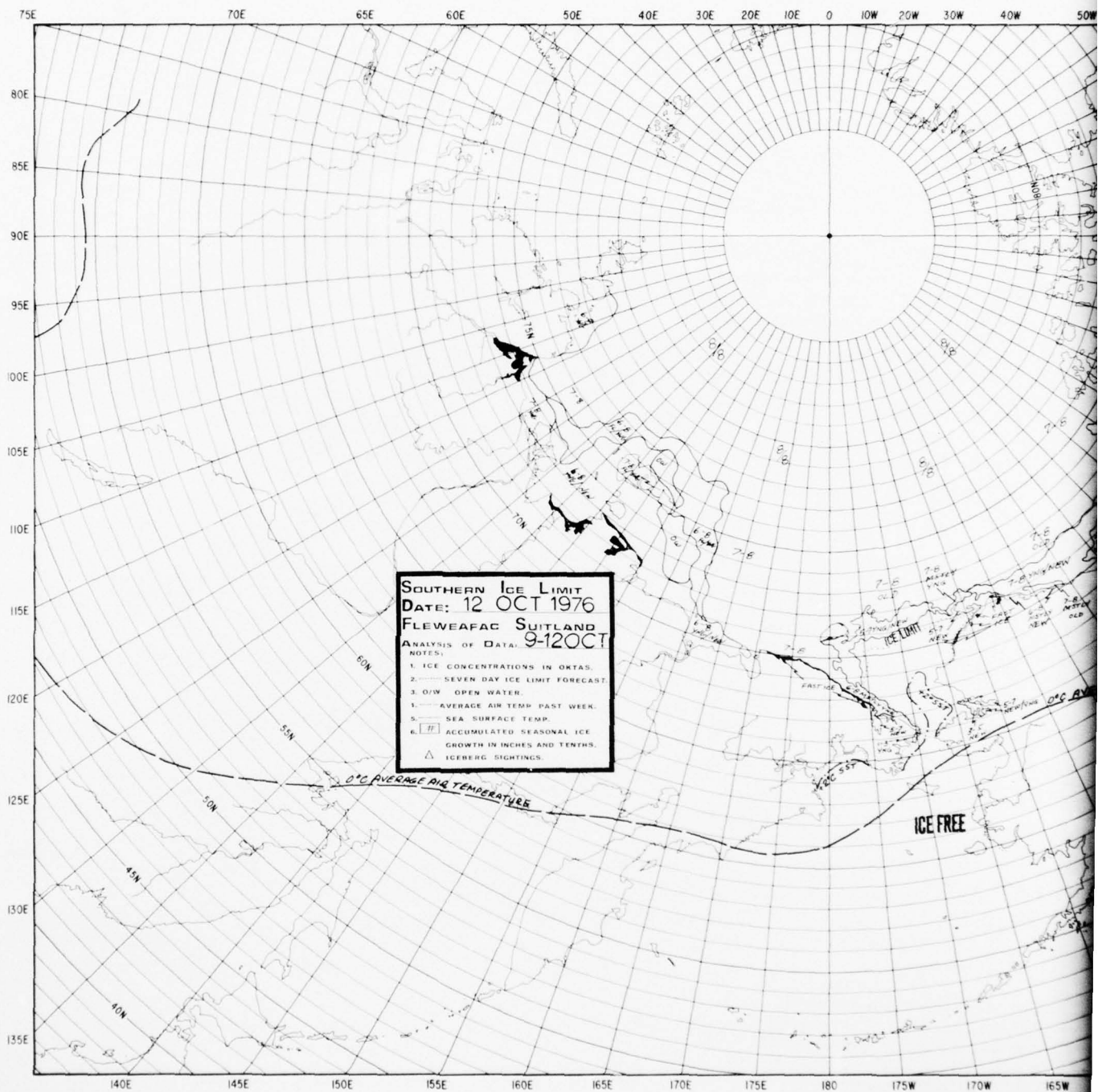


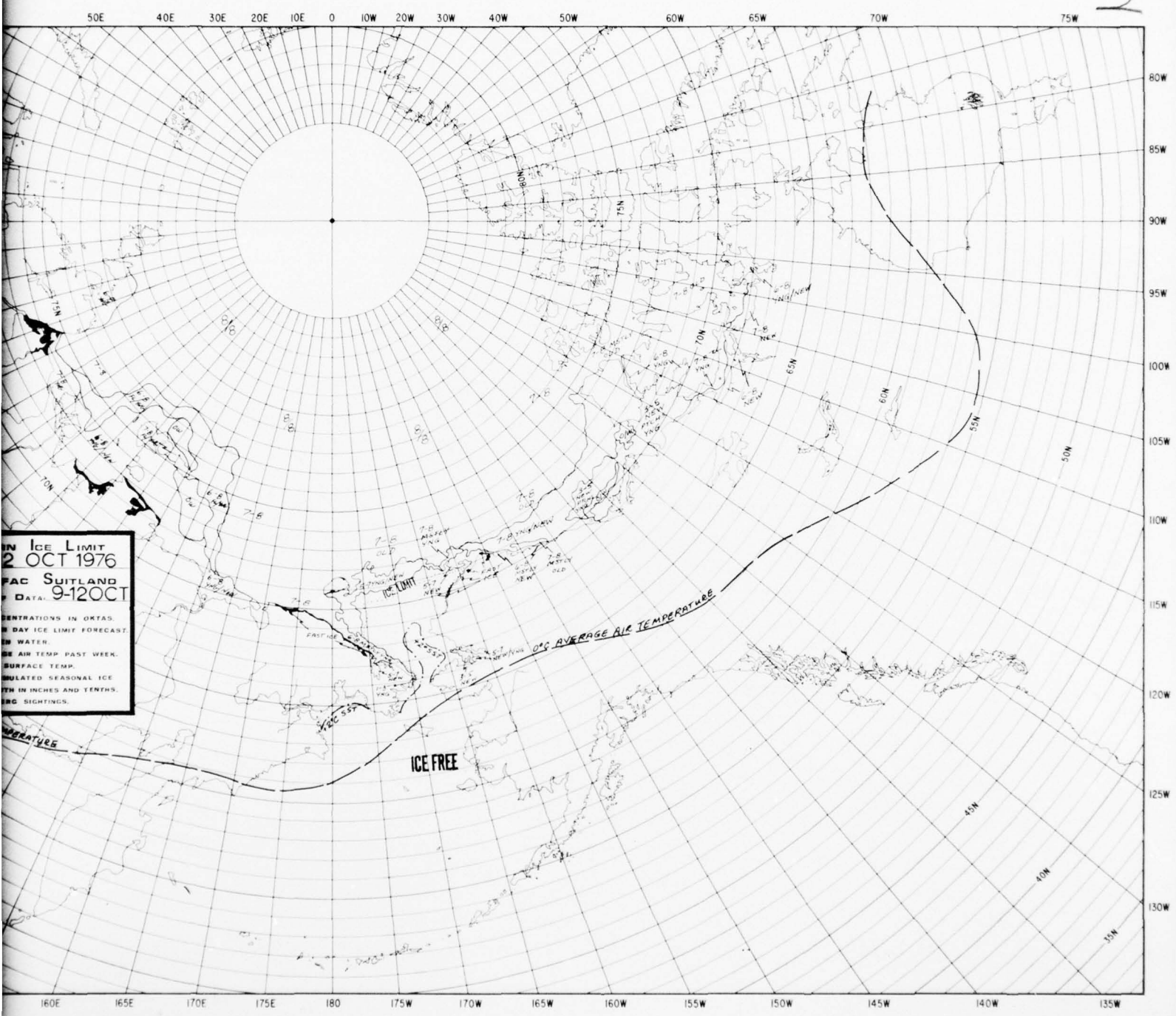




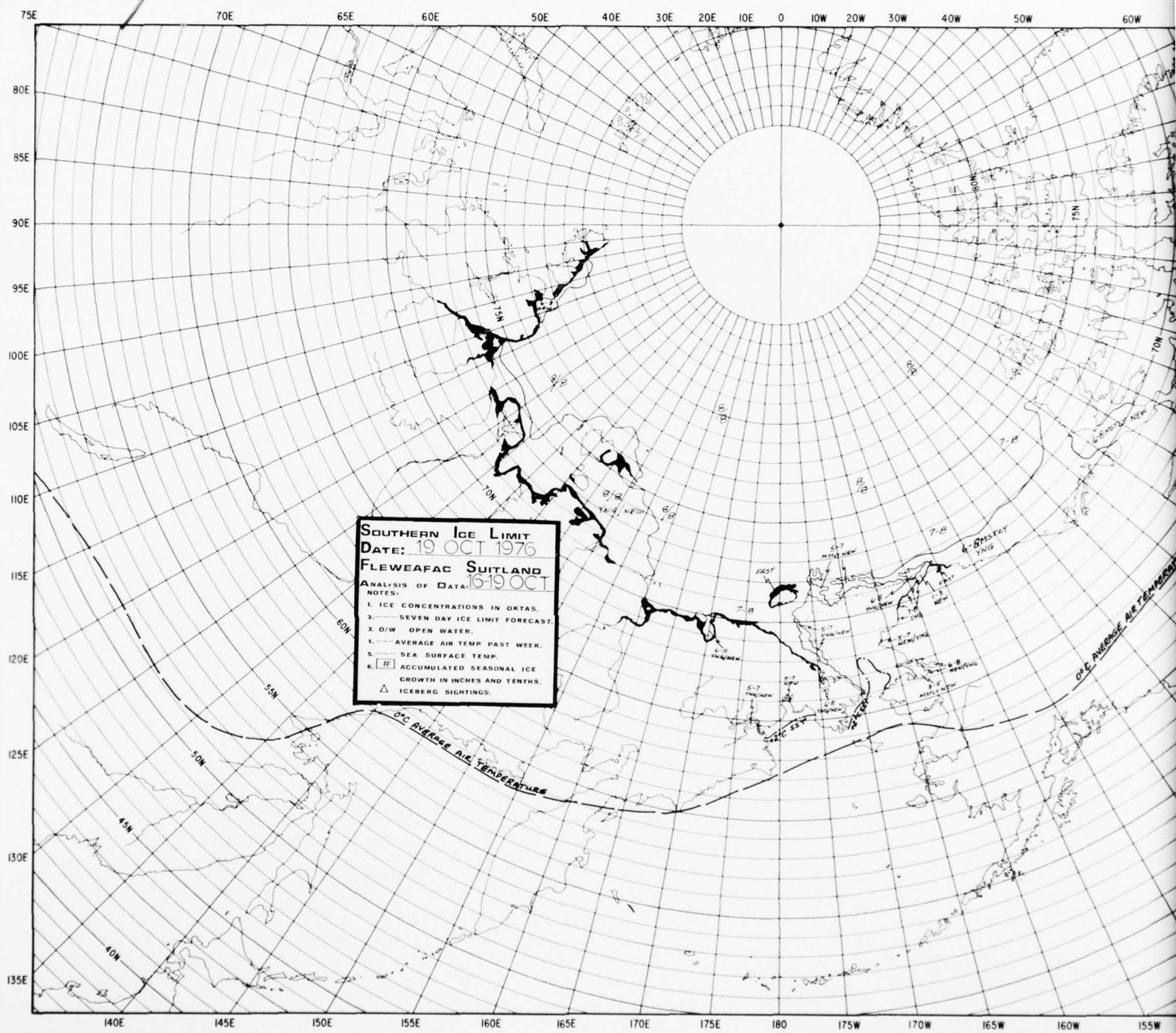
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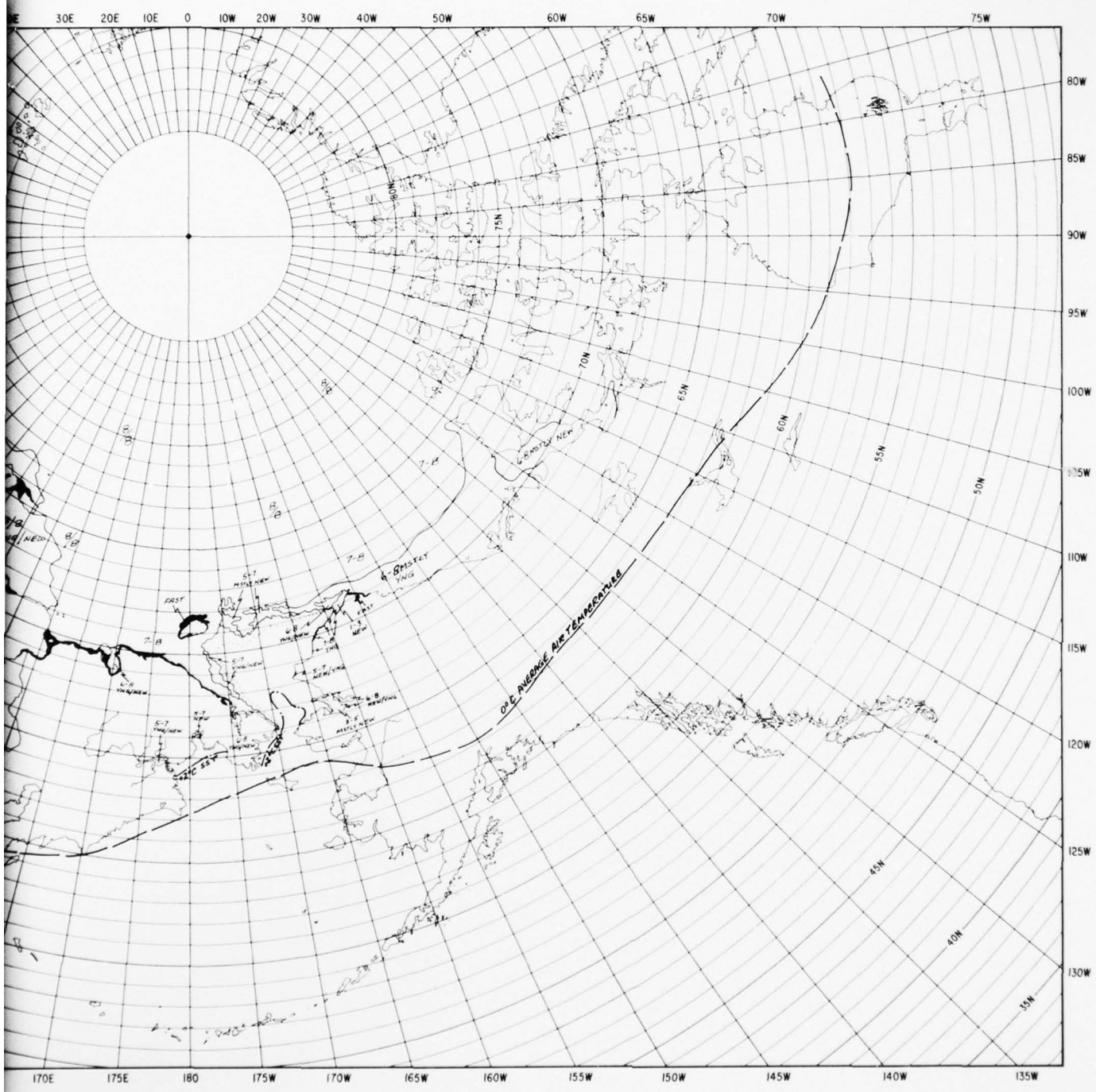






IN Ice Limit
2 OCT 1976
FAC SUTLAND
DATA: 9-12 OCT
CONCENTRATIONS IN ORTAS.
DAY ICE LIMIT FORECAST
IN WATER.
AIR TEMP PAST WEEK.
SURFACE TEMP.
INSULATED SEASONAL ICE
TH IN INCHES AND TENTHS.
SIGHTINGS.





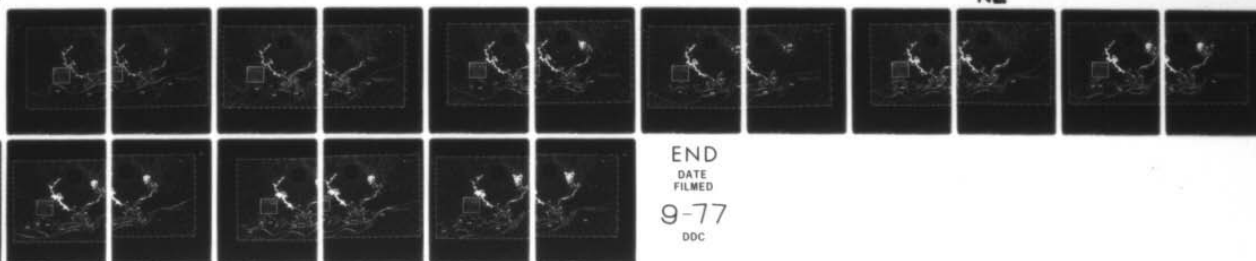
AD-A043 353

FLEET WEATHER FACILITY SUITLAND MD
EASTERN-WESTERN ARCTIC SEA ICE ANALYSES. (U)
1976

F/G 8/12

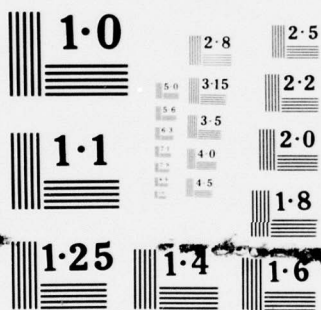
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3 OF 3
ADA
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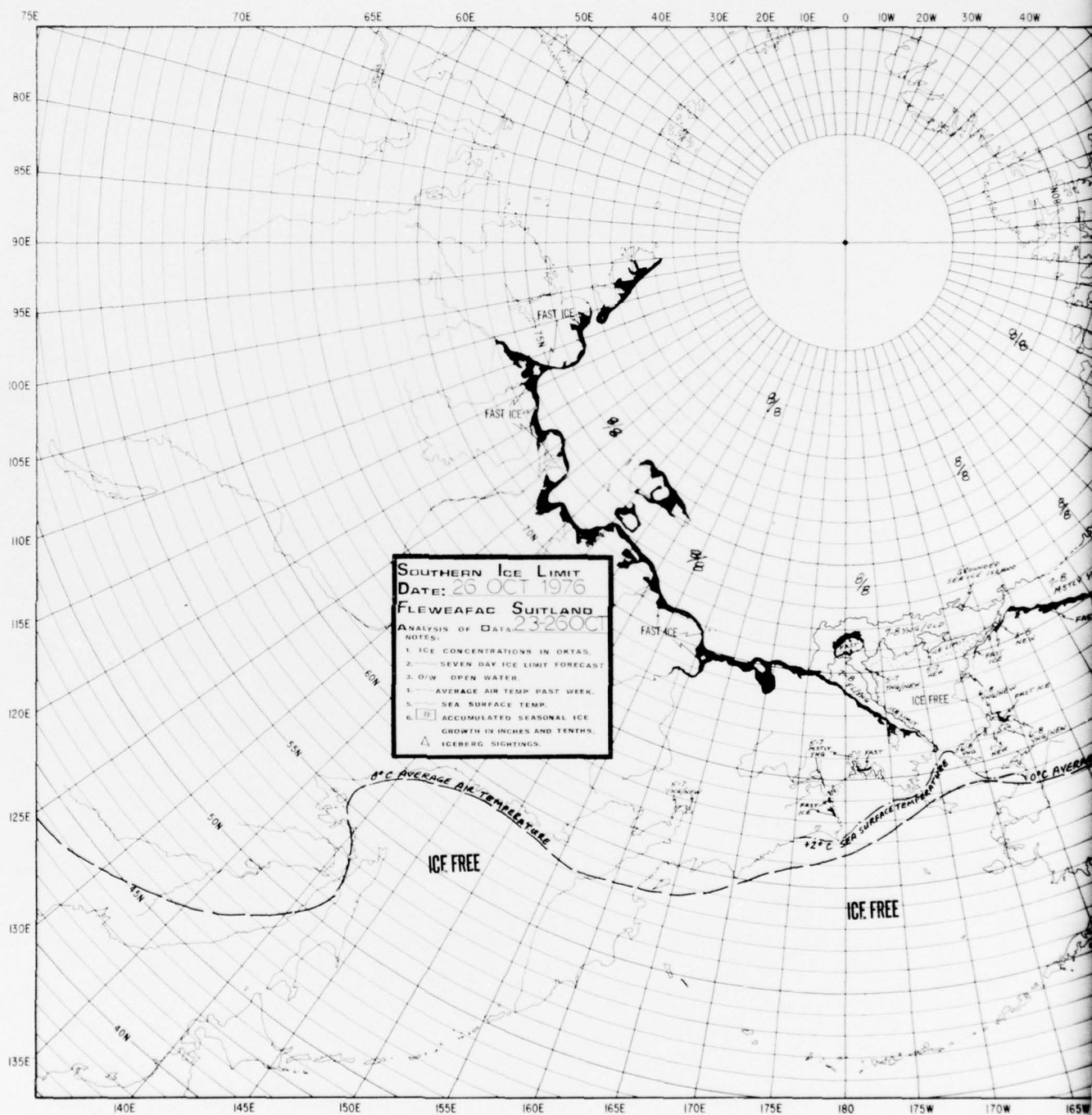


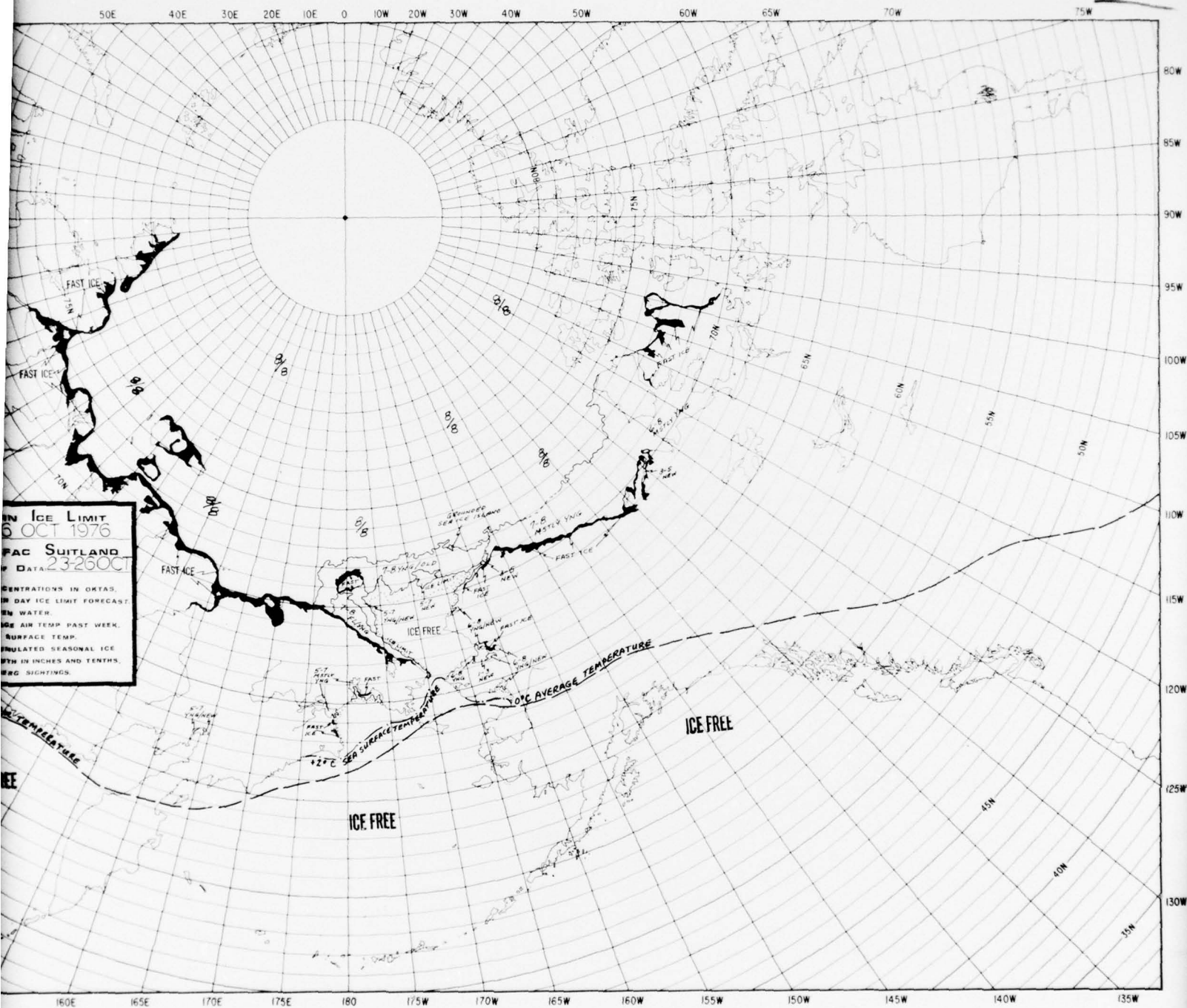
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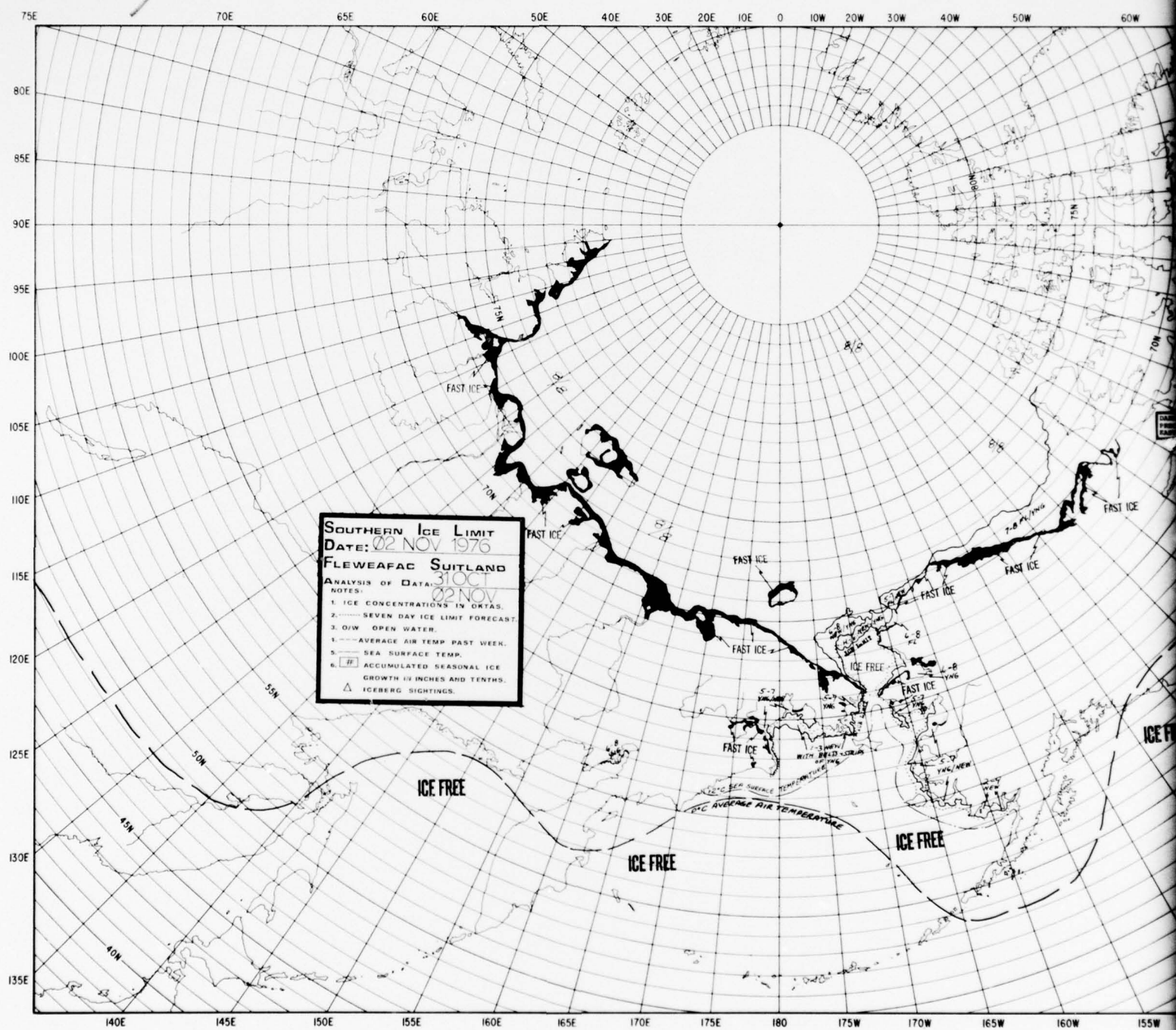
END
DATE
FILMED
9-77
DDC

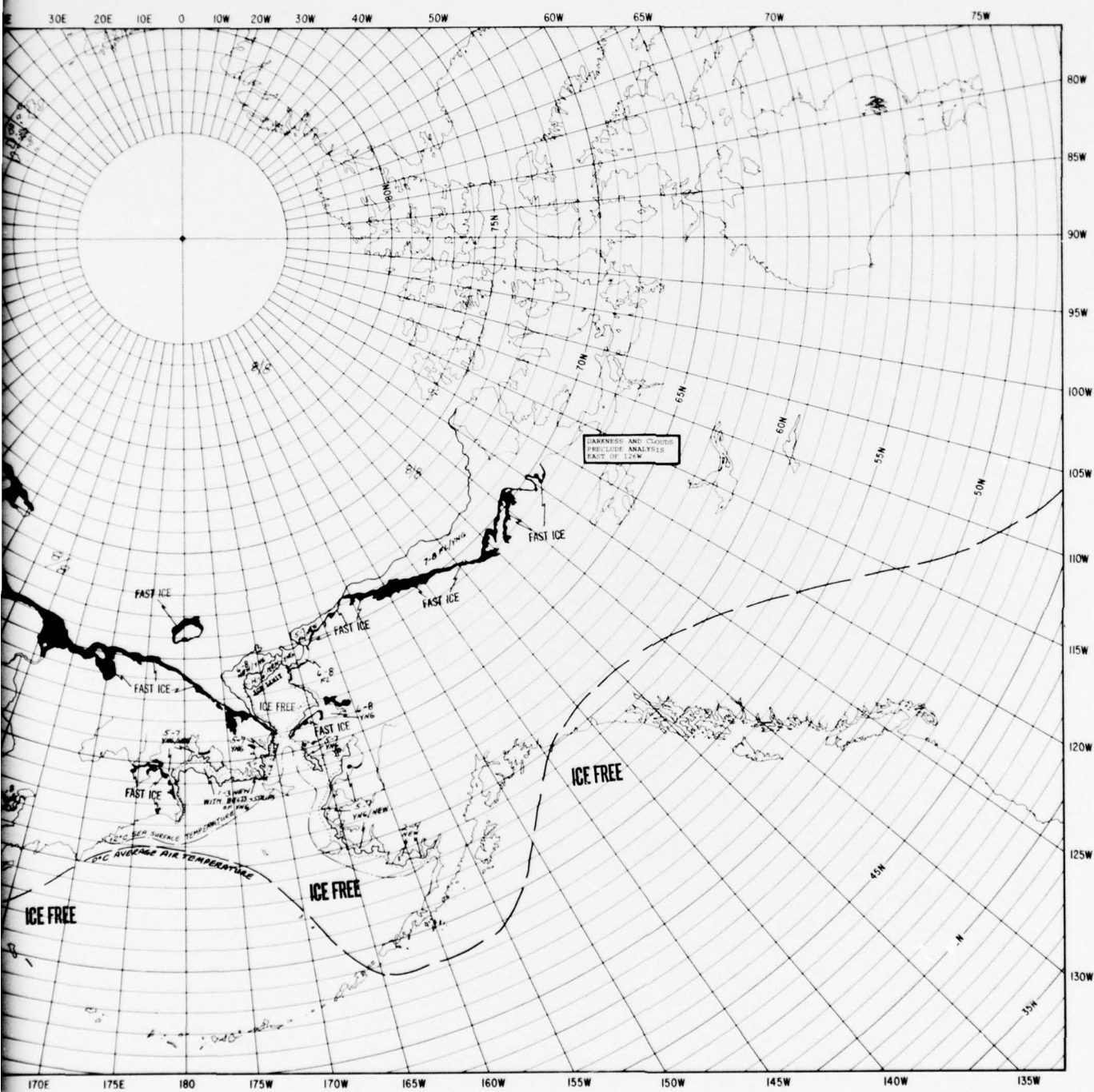


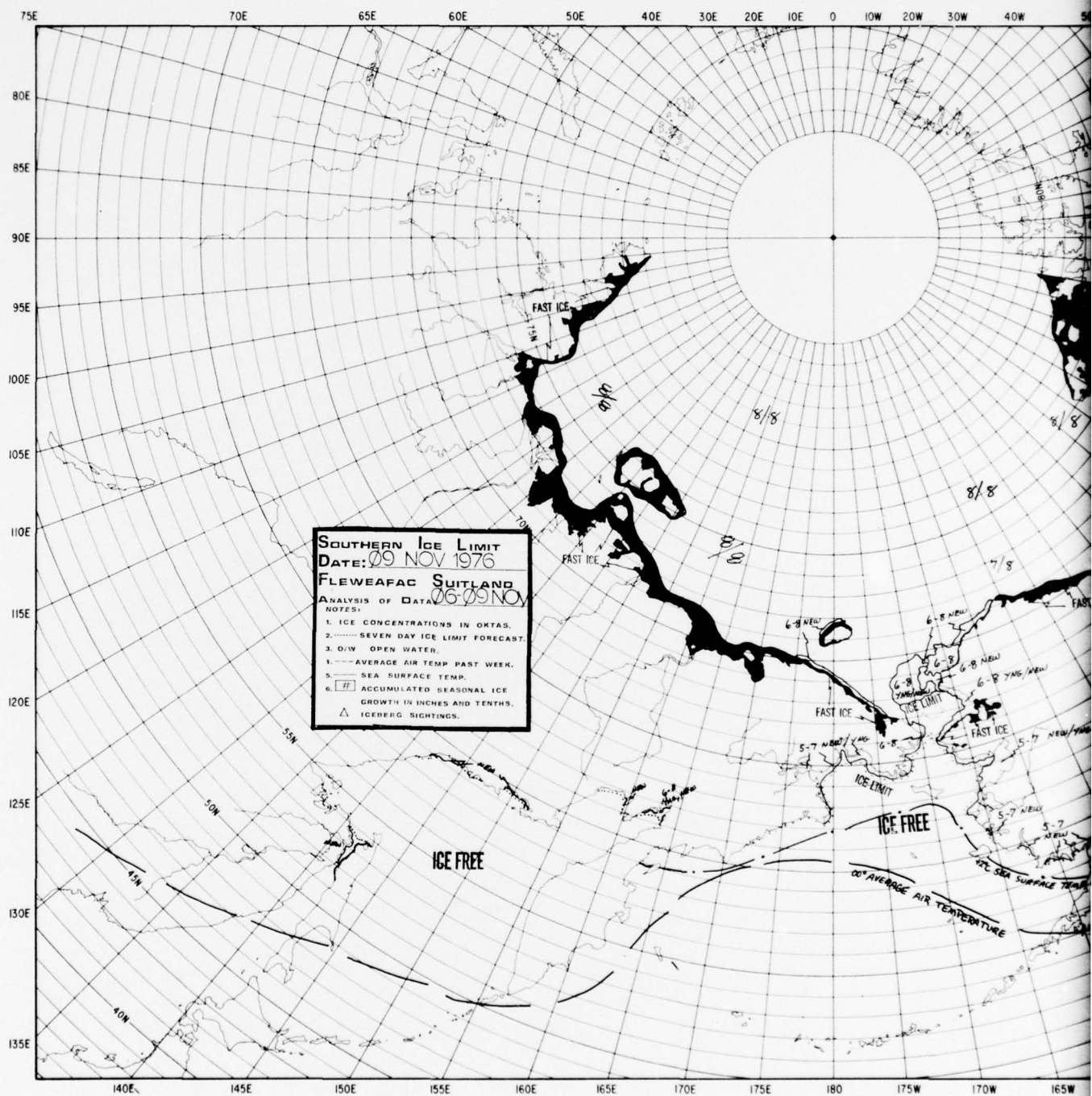
NATIONAL BUREAU OF STANDARDS
MICROCOPY RESOLUTION TEST CHART

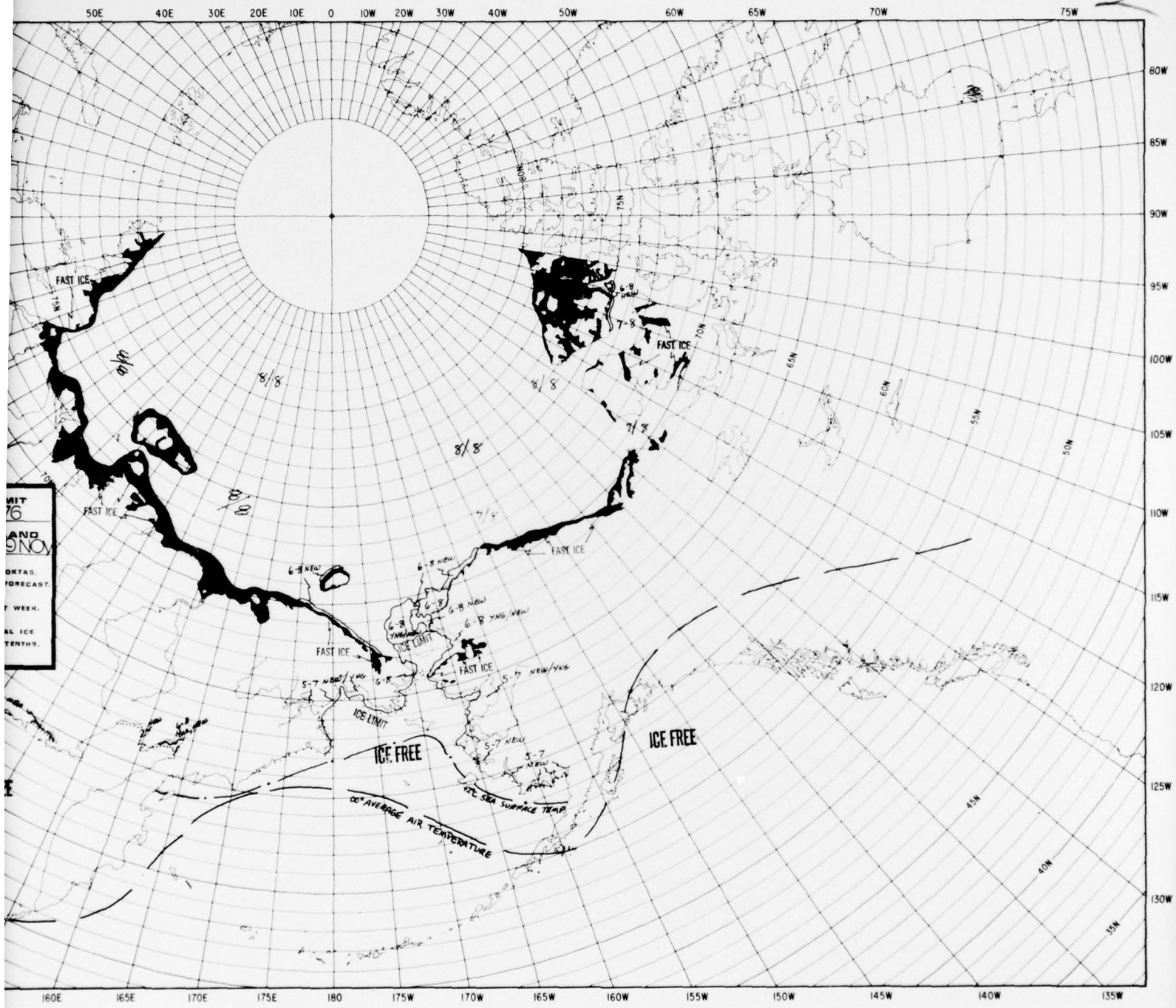


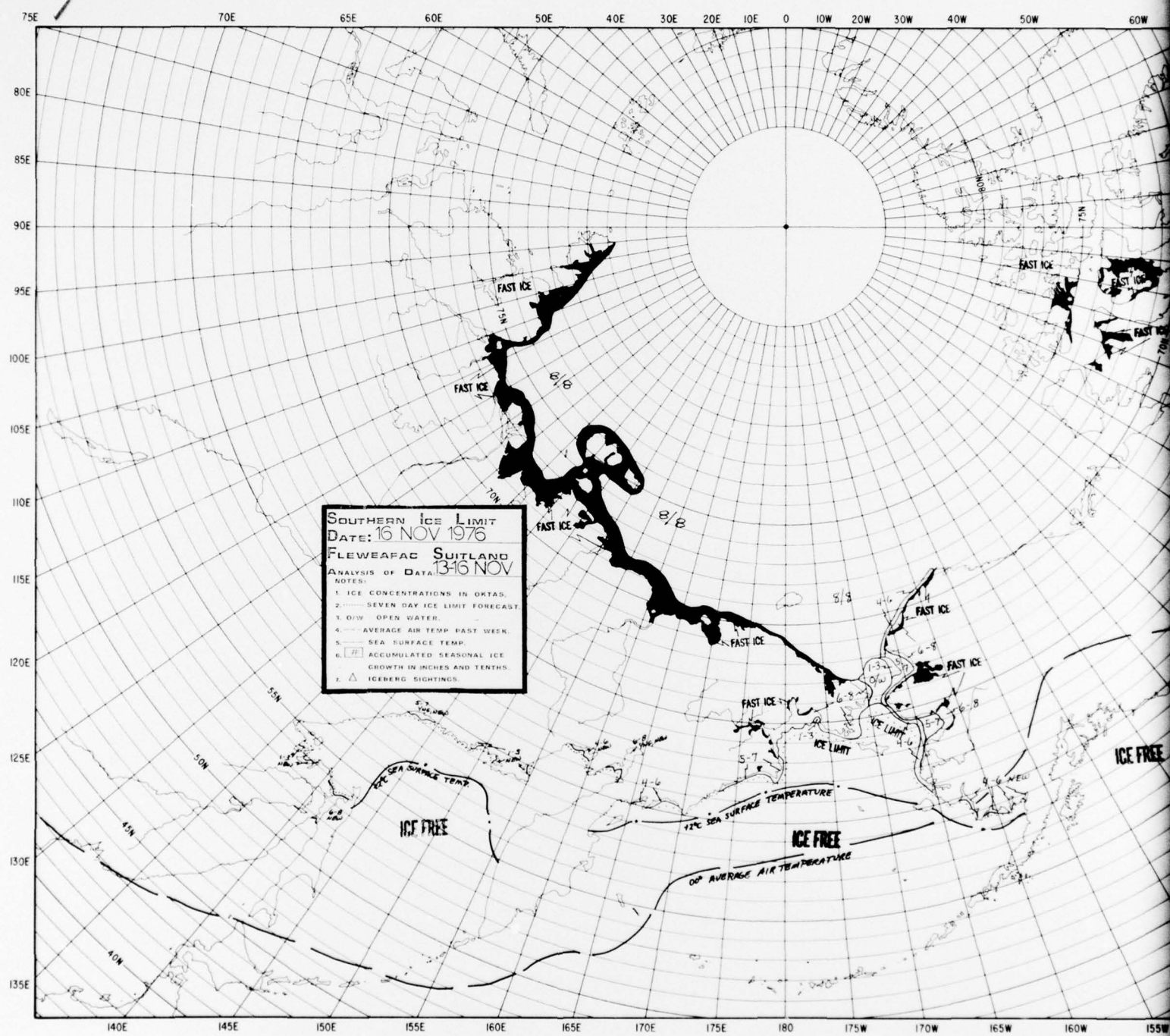


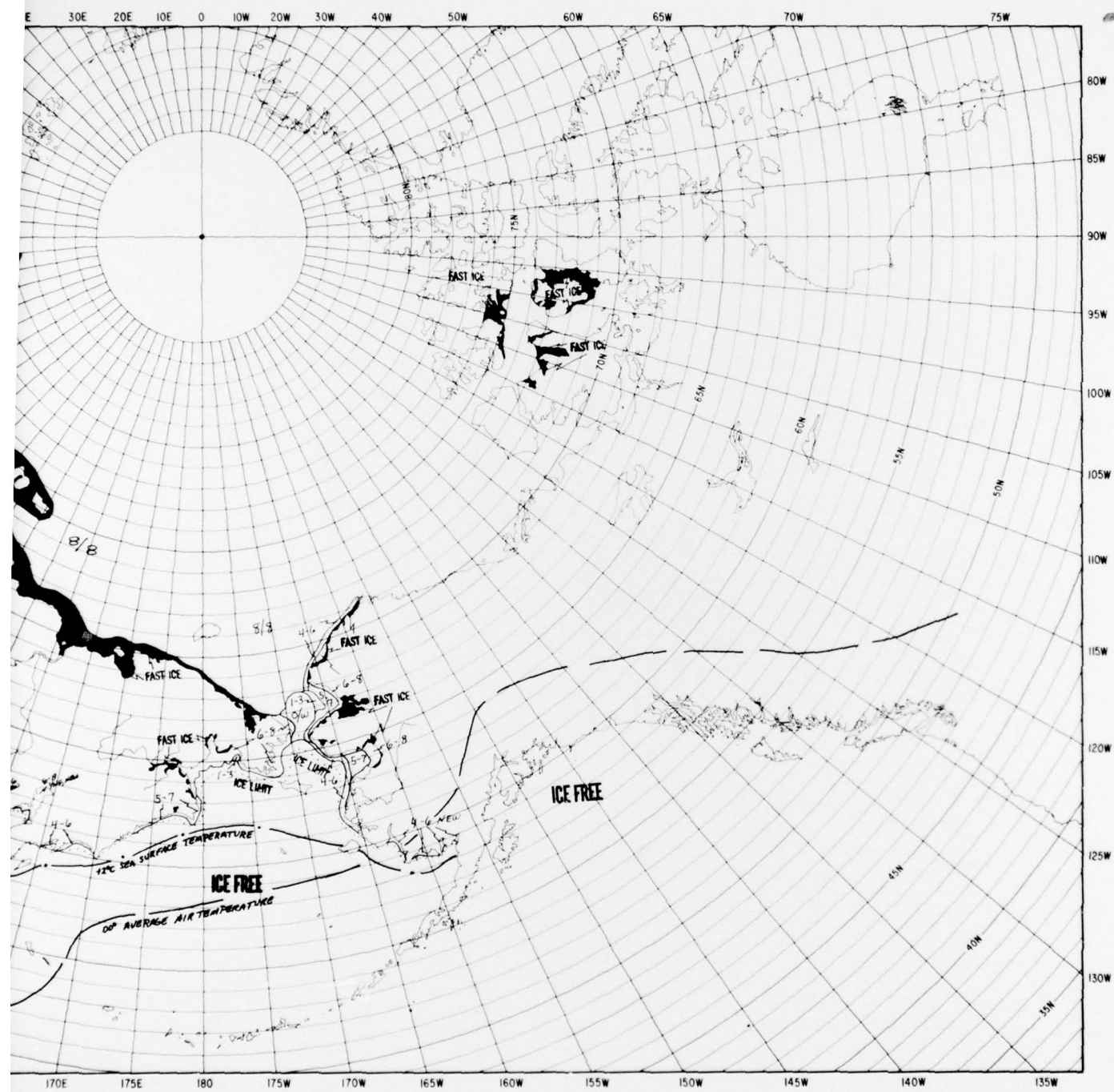


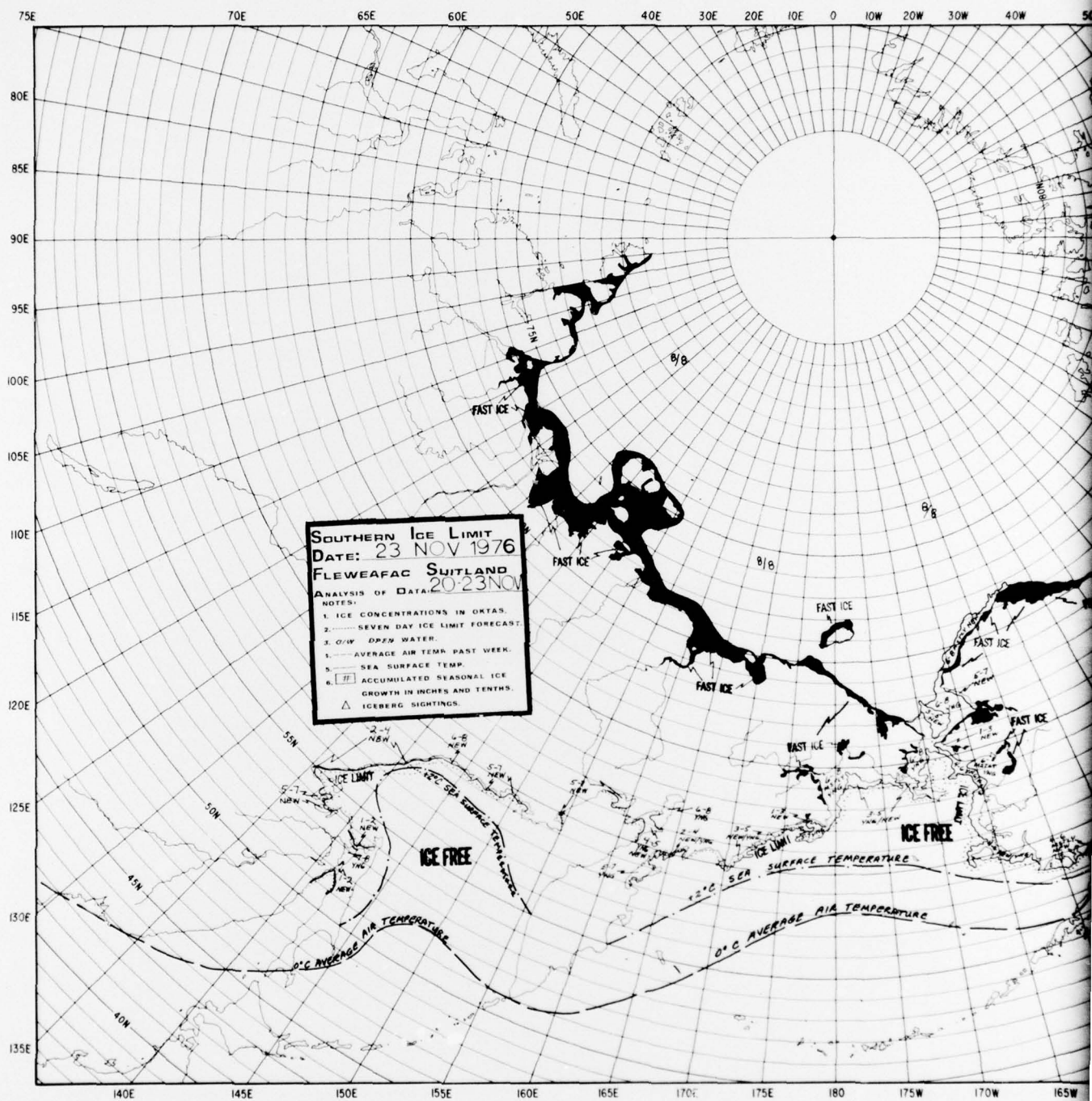


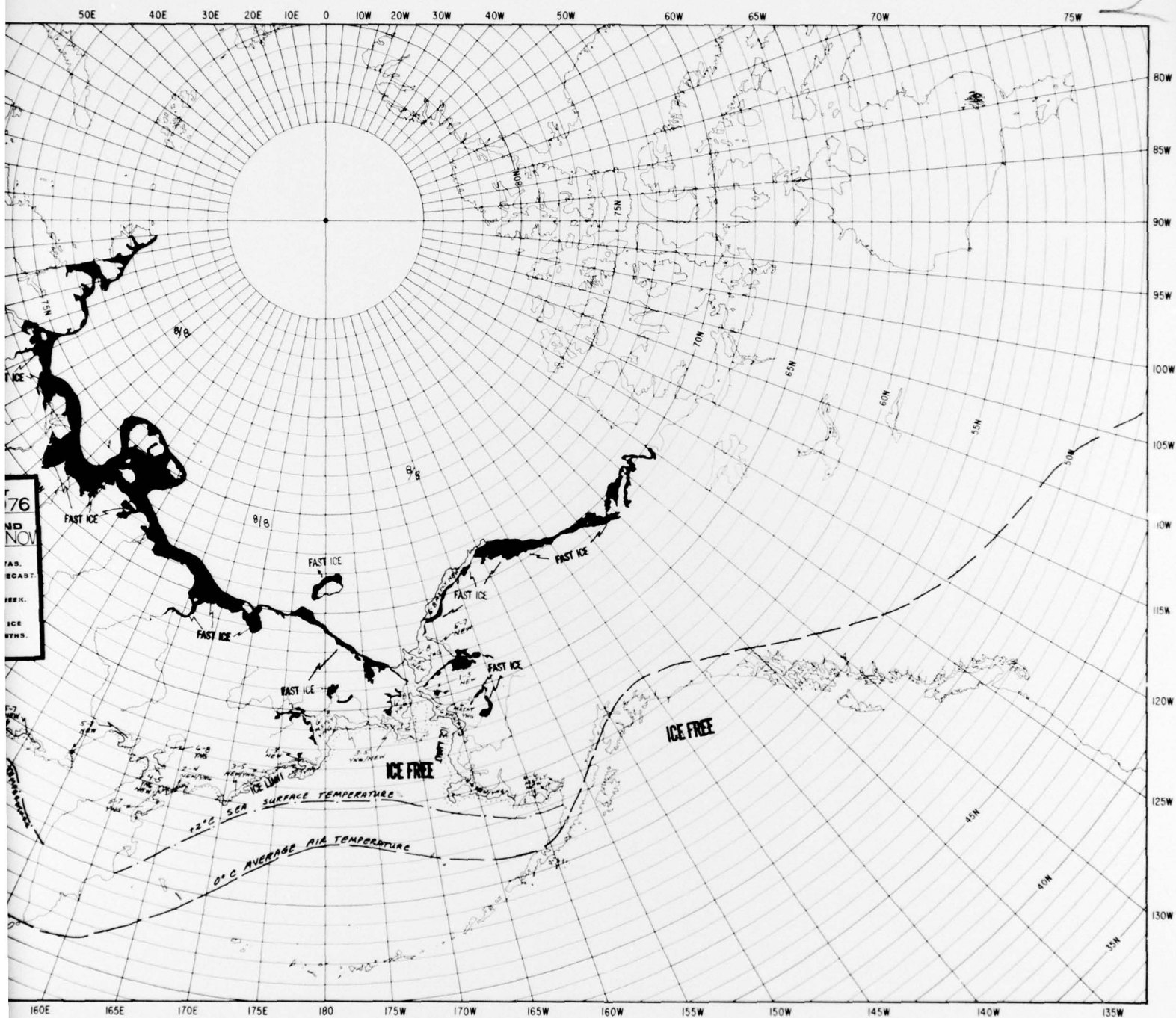


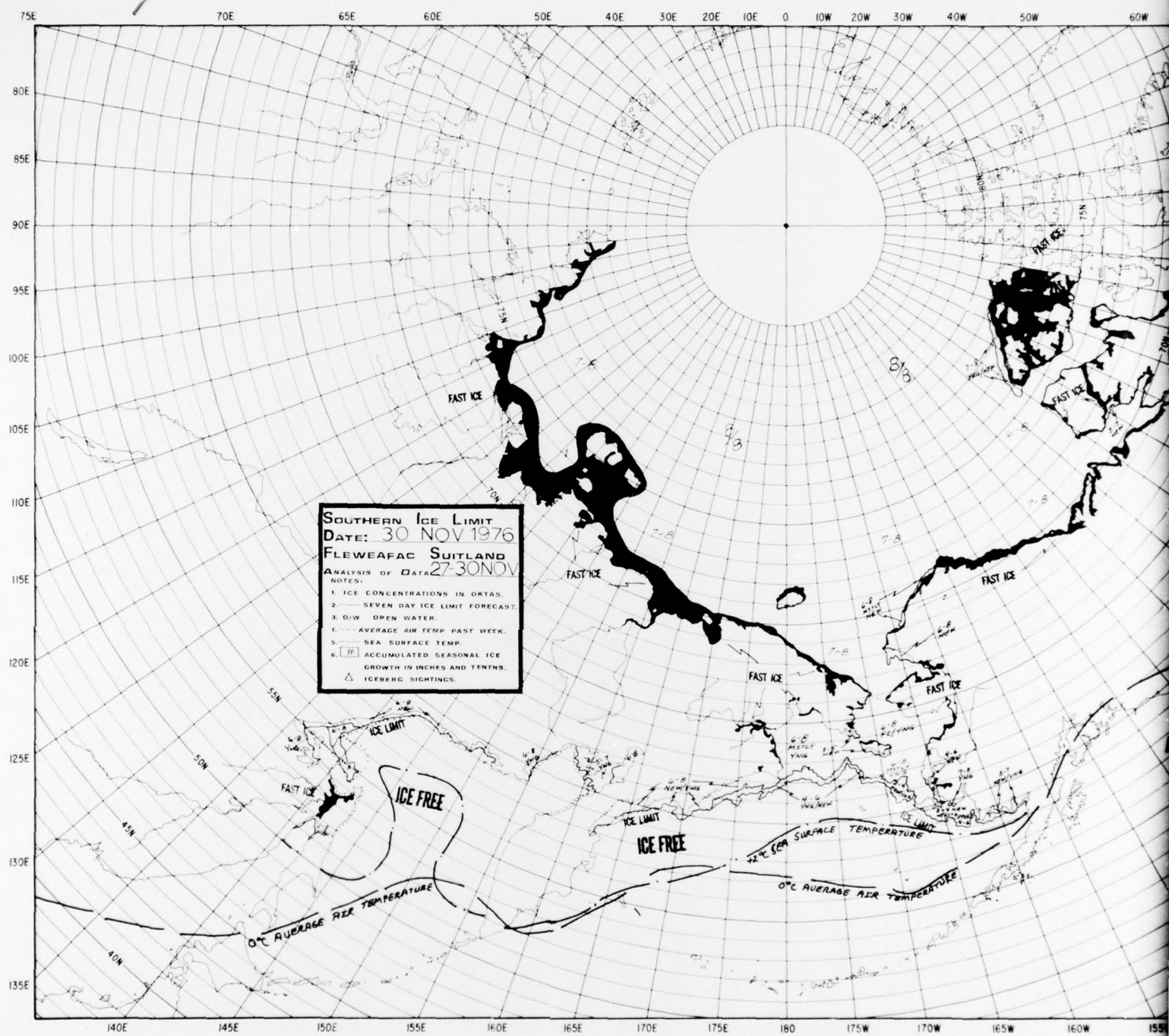


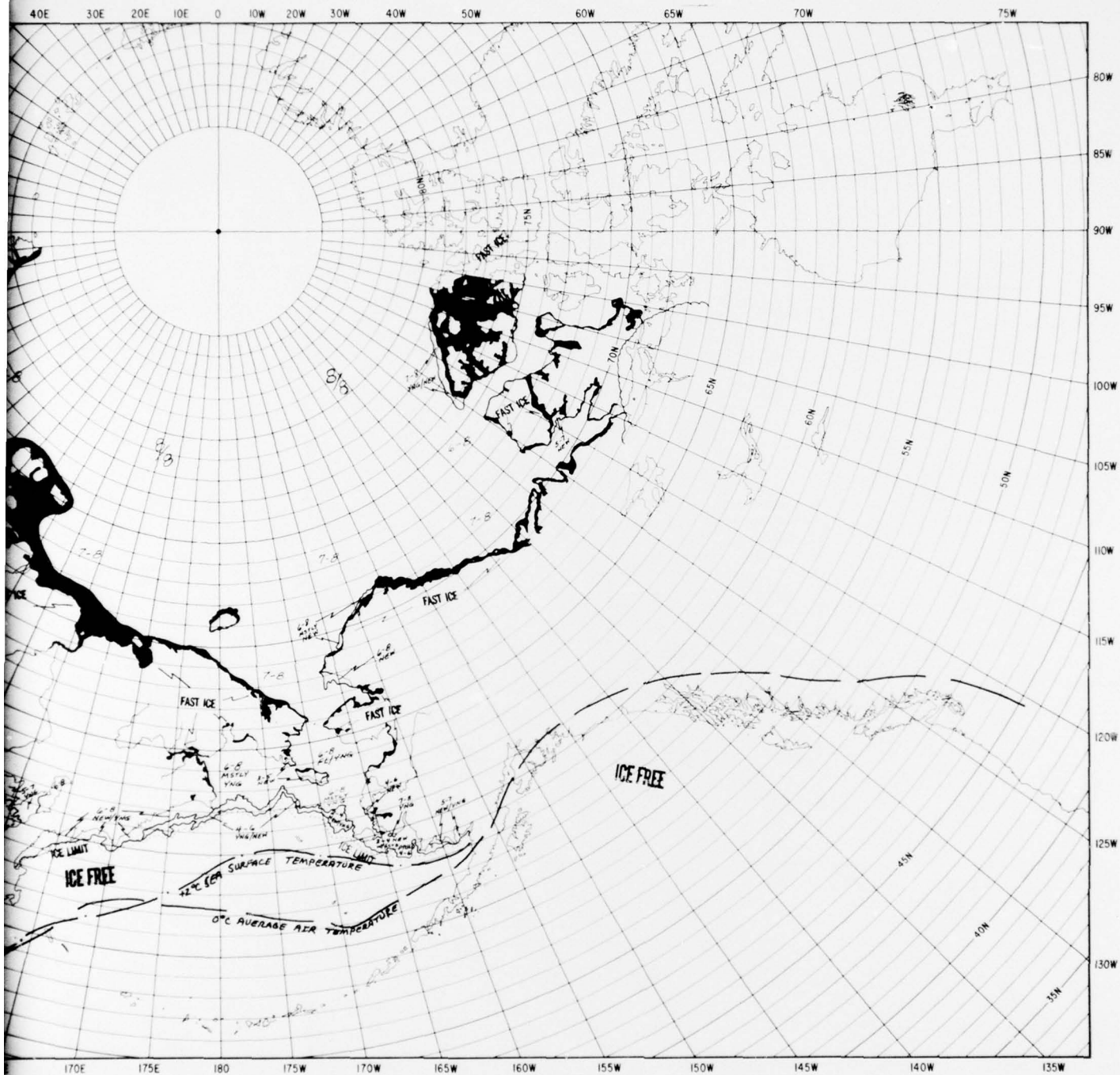


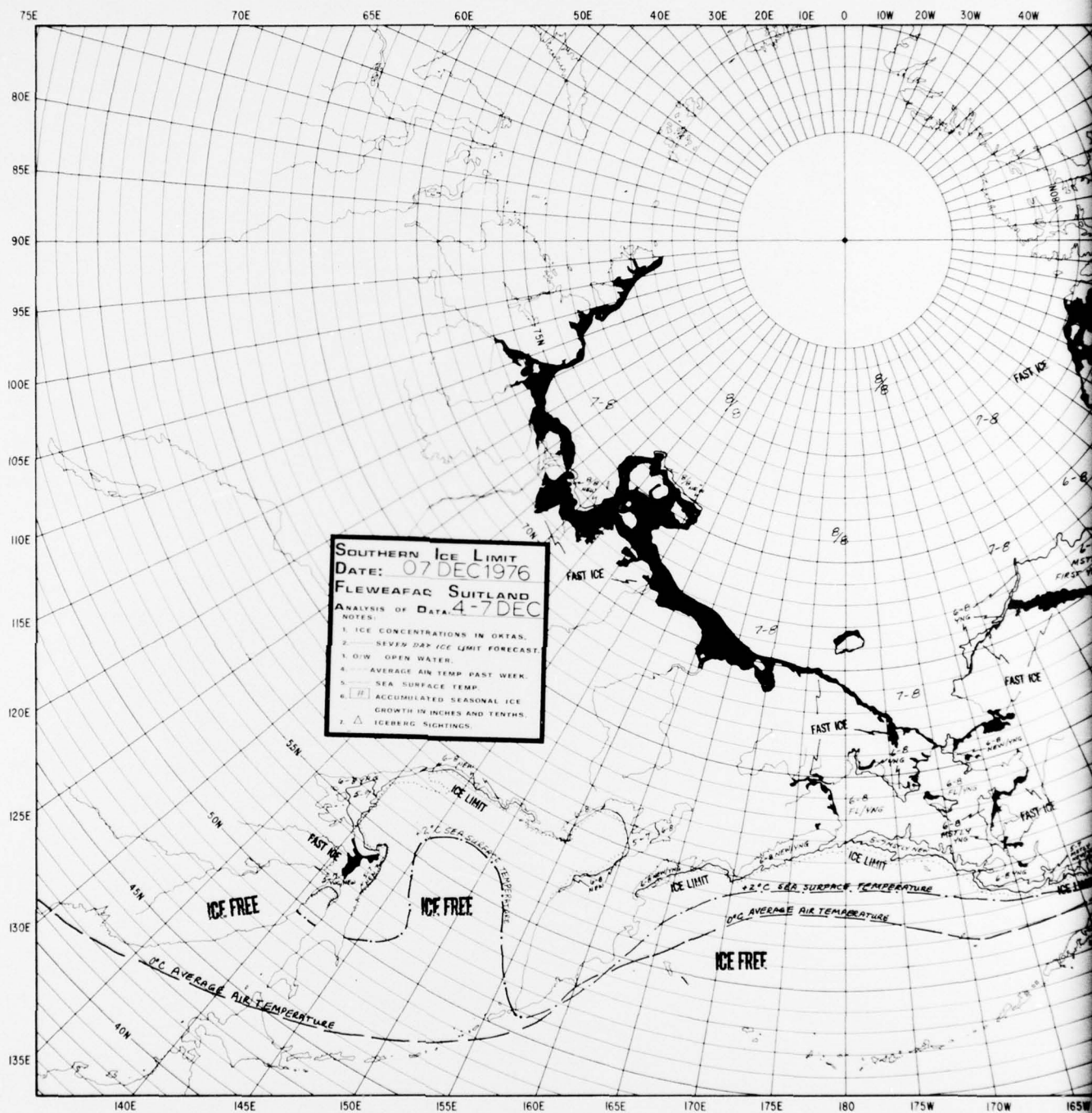


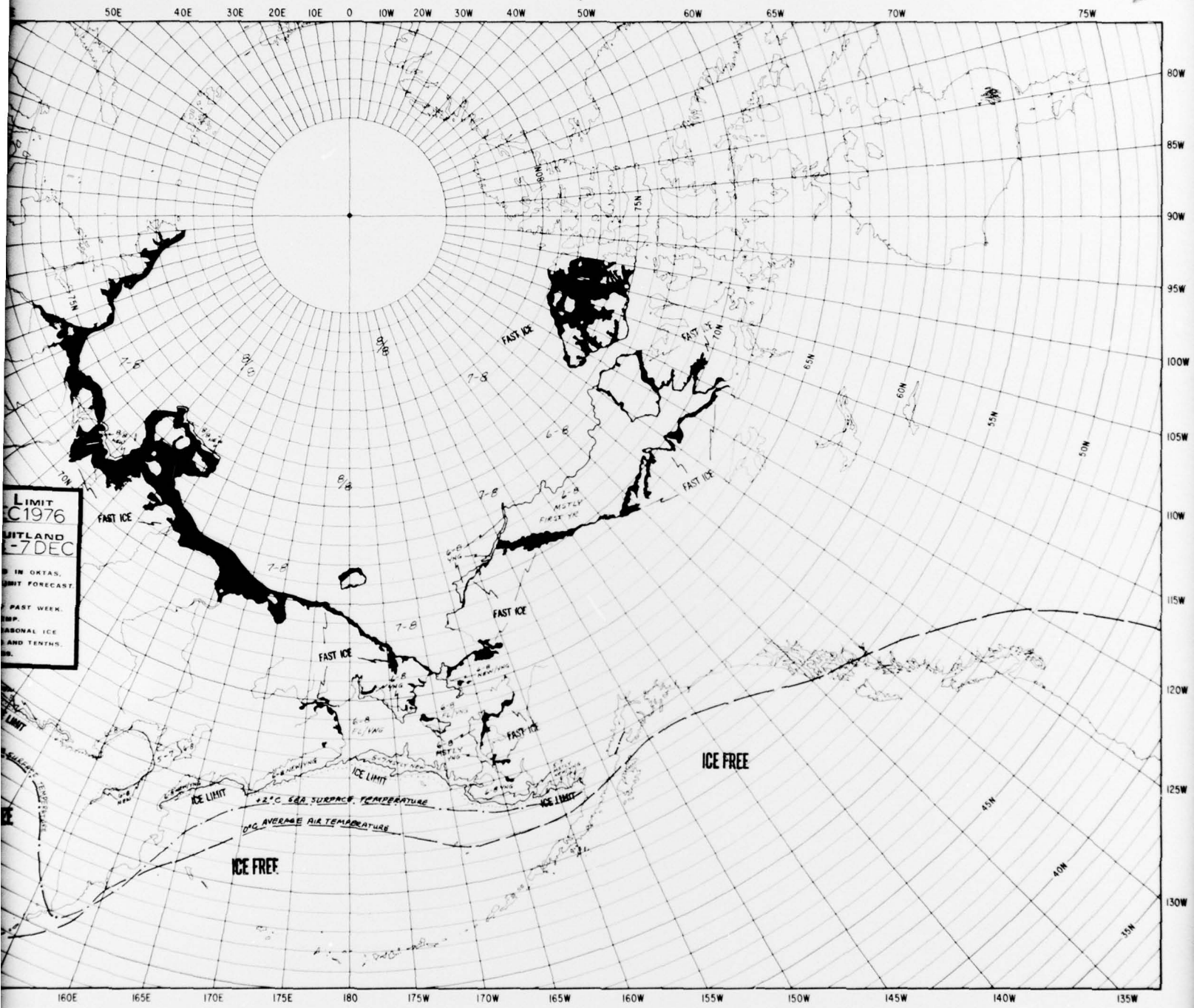


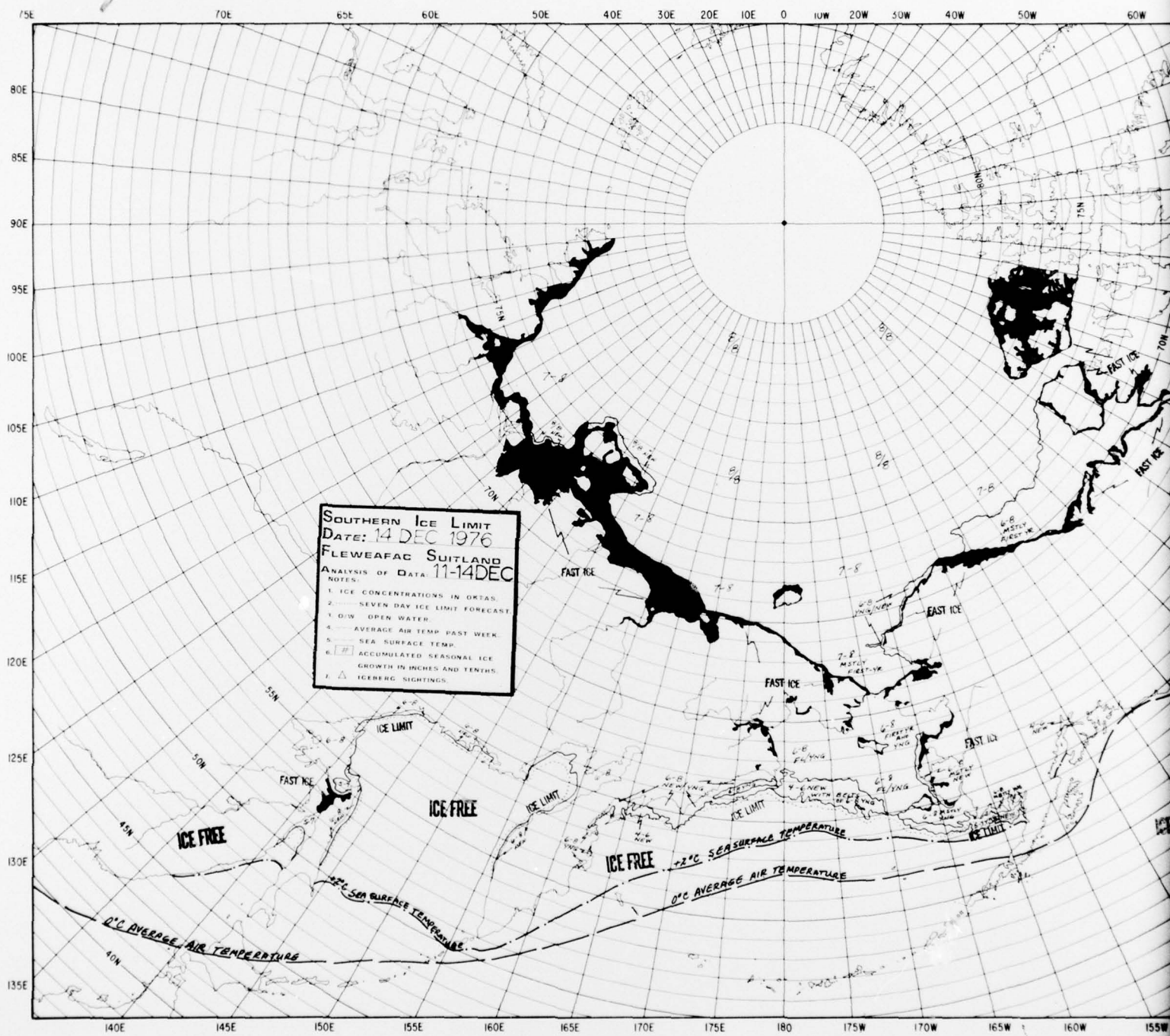




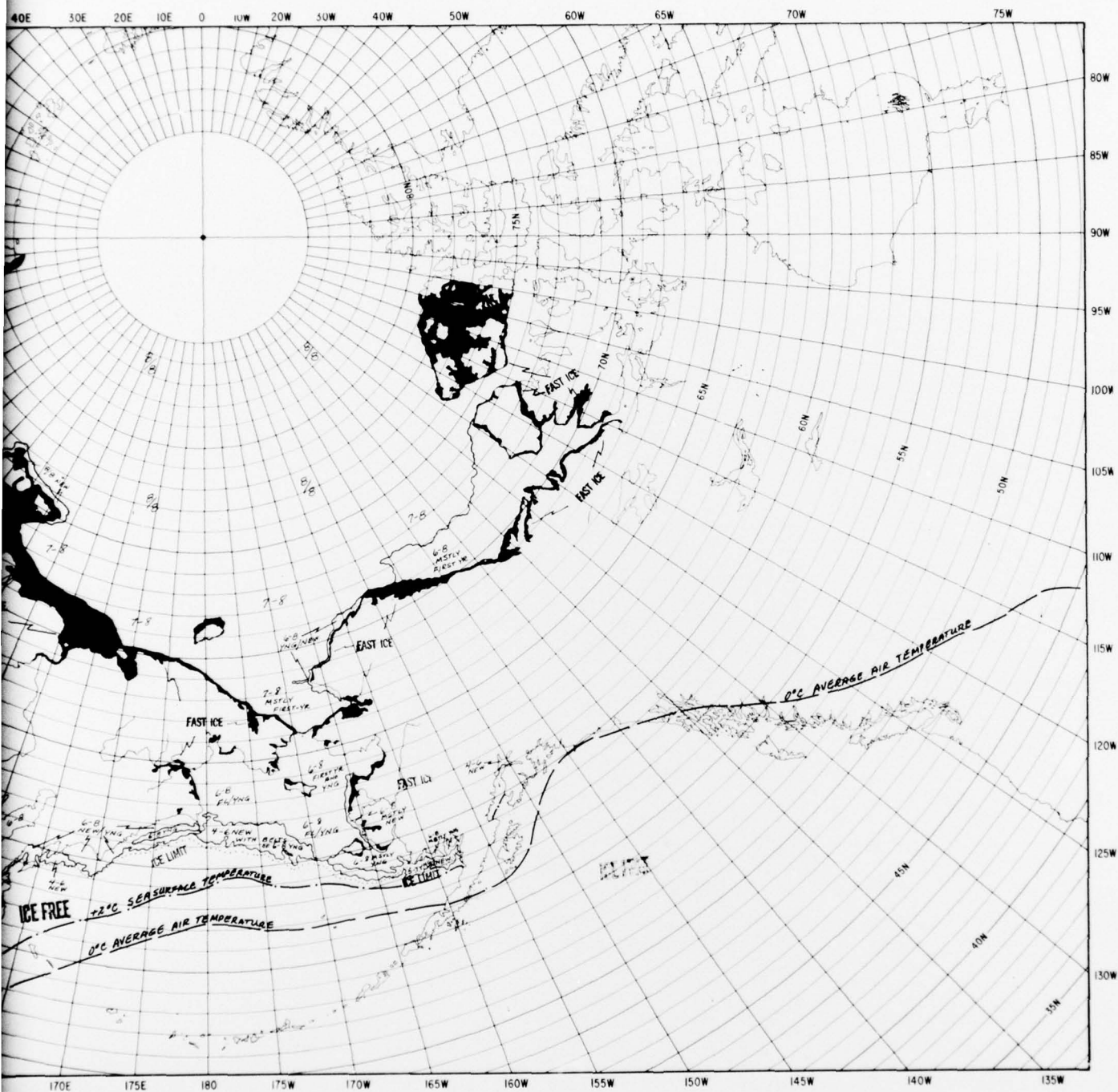


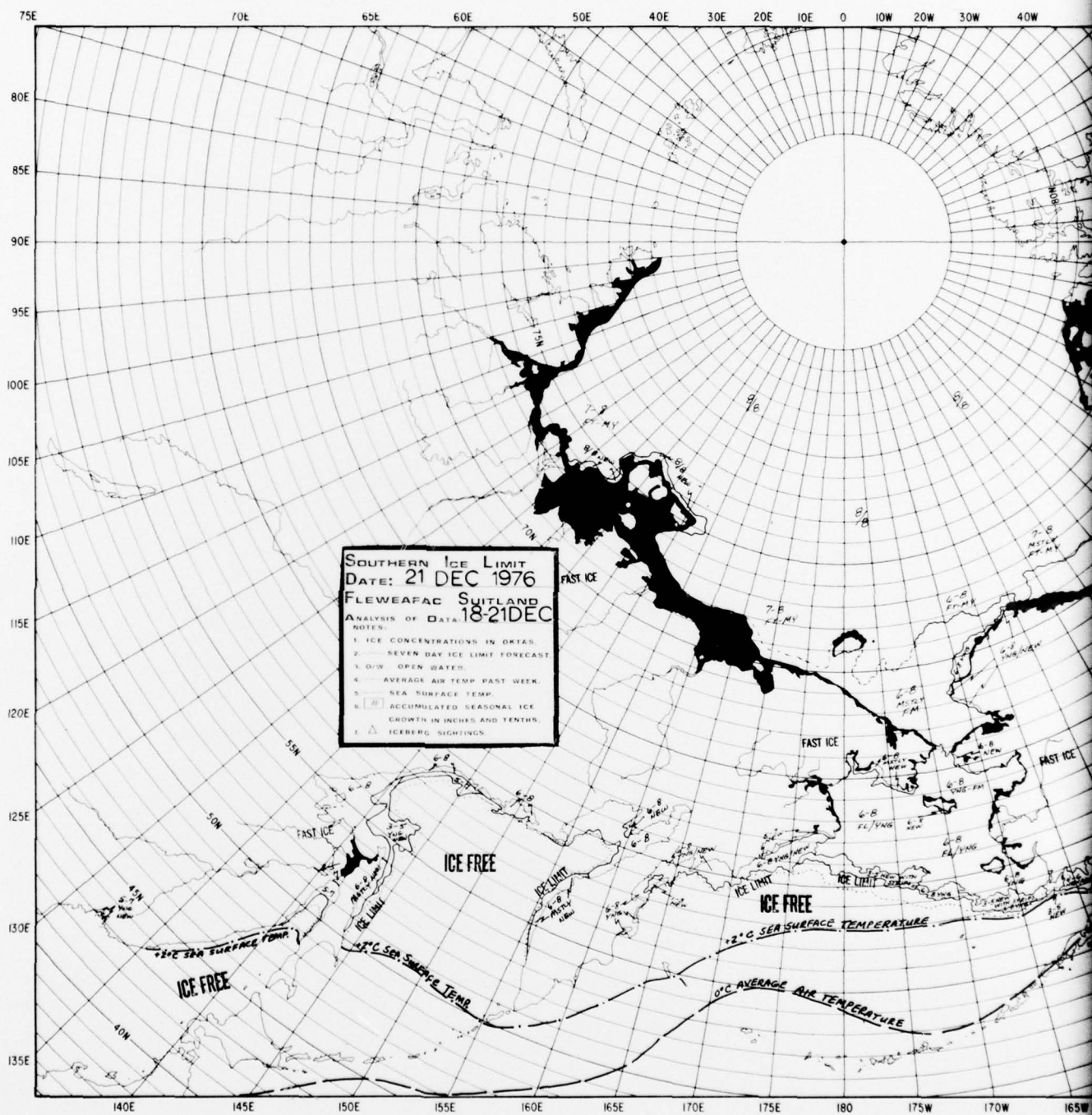


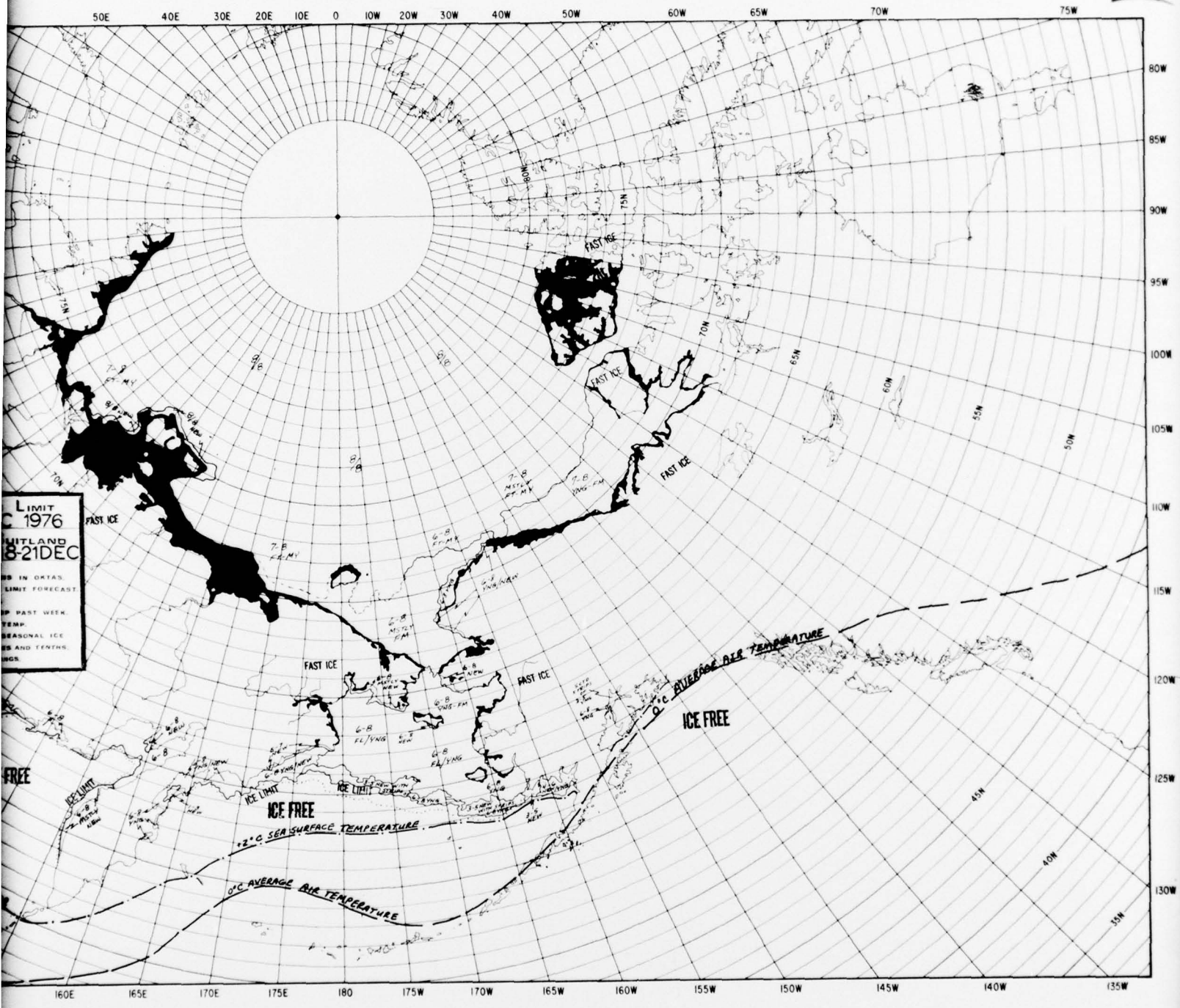




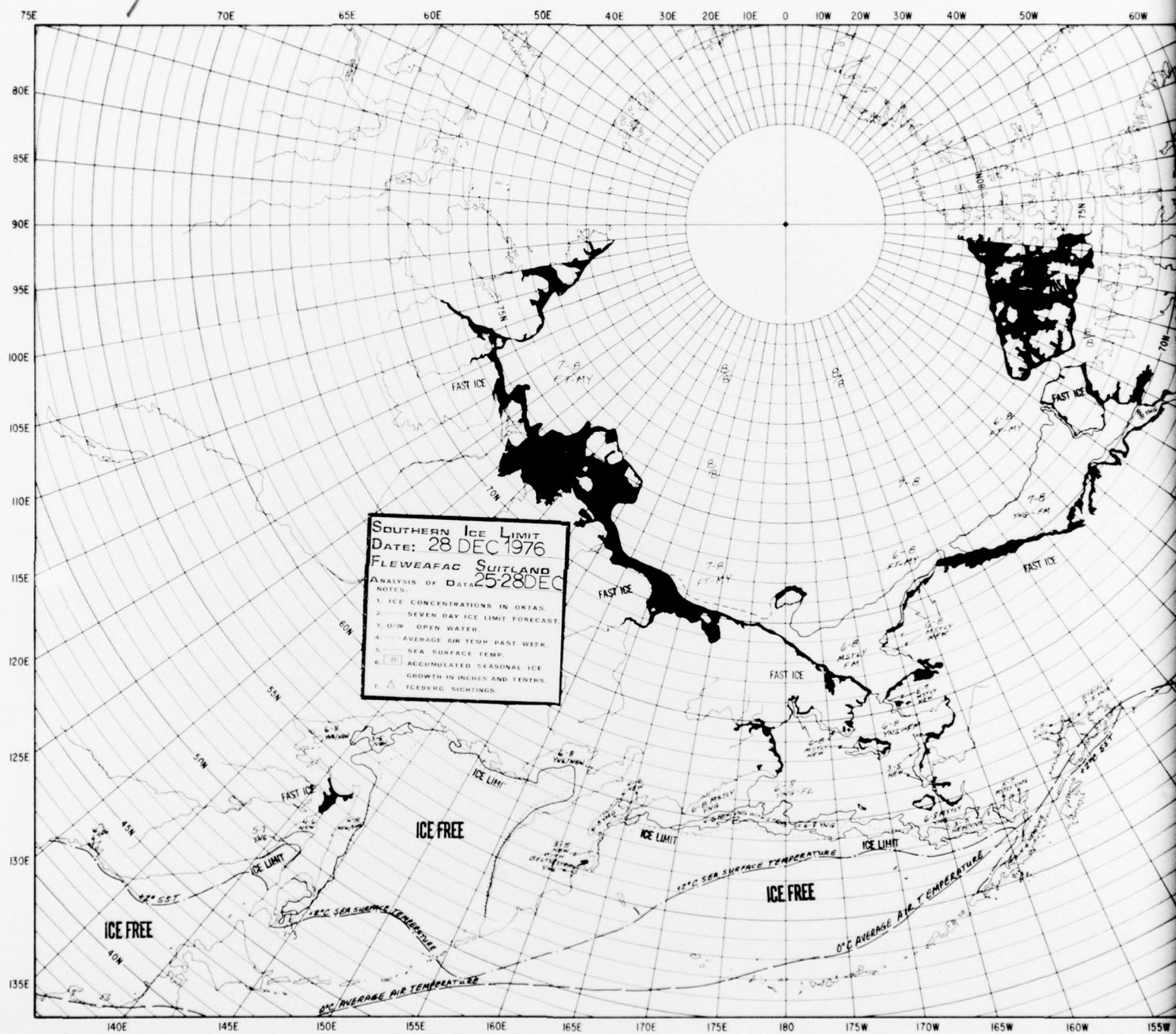
2







LIMIT
C 1976
NORTH ATLANTIC OCEAN
NORTH PACIFIC OCEAN
ICE LIMIT
FAST ICE
ICE FREE
0°C AVERAGE AIR TEMPERATURE
0°C SEA SURFACE TEMPERATURE



2

